

SHROUD NEWS

A NEWSLETTER ABOUT RESEARCH ON THE HOLY SHROUD OF TURIN

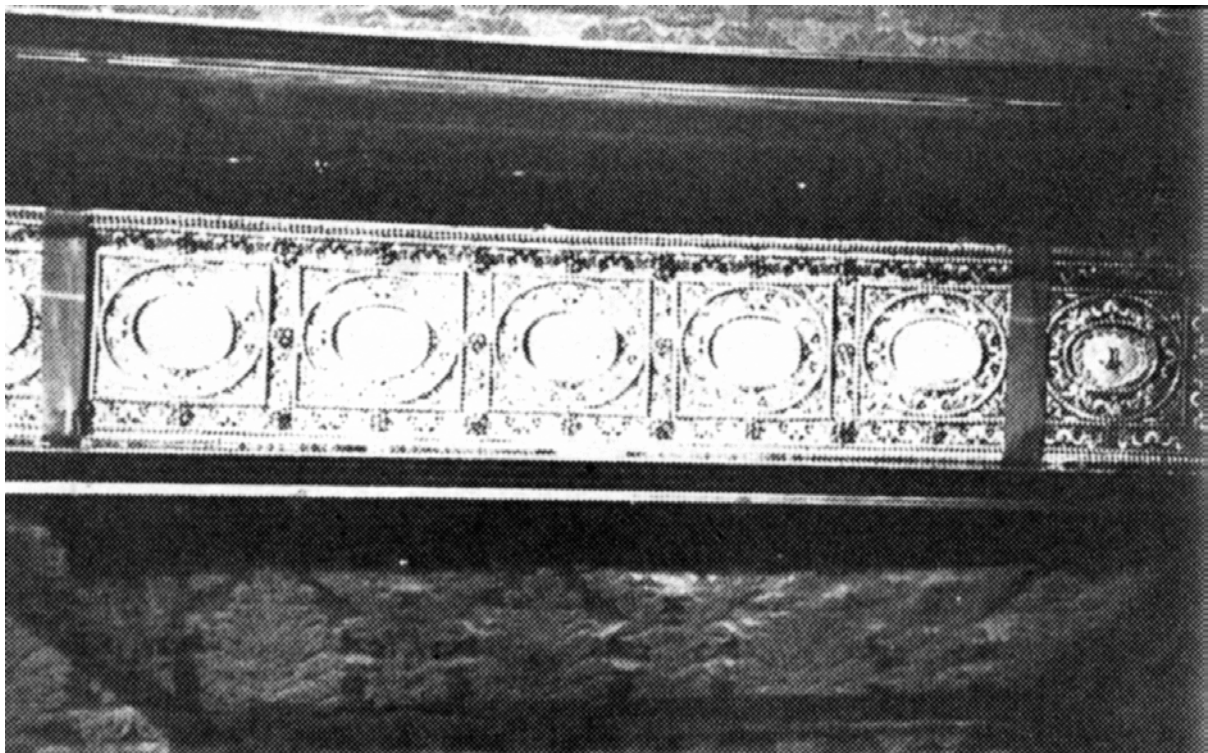
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edited by REX MORGAN, Author of several books on the Shroud

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The Shroud of Turin in its silver casket now placed in the body of the Cathedral of St John during repair work to the Chapel of the Holy Shroud. Since first being arranged between plate glass sheets it now has (worn) red damask silk hangings surrounding it as well

EDITORIAL

As I forecast in the last issue there has been so much material becoming available from sources all over the world that it seems important to get much of it into the hands of my readers before it lies unused as, regrettably, does quite a lot of what I have gathered over the past many years since *Shroud News* began in 1980.

Accordingly this is an extra issue for 1996 and although dated for September (not a normal issue month) it will not affect the production of two more for the year in October and in December. As I mentioned in the last one it means that the 100th issue will now be scheduled for February 1997 and I hope to be given the strength and inspiration to make it a really special issue. This will depend to a great extent on the response from contributors, a response which has already begun.

This issue is prepared before my departure for New York at which a great Shroud Symposium is planned at Mount Alphonsus in Esopus, a glorious place on the banks of the Hudson in one of the most pleasant areas in the world. I shall be reporting this Symposium in the October issue and no doubt the several days of interaction between a number of the "heavies" of the Shroud Crowd will give us plenty to think about.

I am also very pleased to send with this number a copy of another splendid paper by Lennox Manton with coloured illustrations. *SN* readers will recall the first of these in which Manton presented some very interesting argument and published for the first time, through Runciman Press, some of his quite remarkable original photographs taken in now inaccessible places in Cappadocia. This second monograph continues that practice and I hope it will be convenient for recipients to favour Runciman Press with the small payment requested to cover the cost of the colour printing.

REX MORGAN

WHY SHILLY SHALLY, MY LORD?

by Bro Bruno Bonnet - Eymard

Another fascinating article reprinted from *La Contra - Reforme Catholique Au XX Siecle* No 281 December 1995

Under the heading: "Shroud, the image for the year 2000", the *Avvenire* for Saturday 7 October 1995 published an interview in which Cardinal Saldarini told Alberto Sormani: "The fury over authenticity arises from a misunderstanding."

HERE IS THIS DOCUMENT...

Turin. Shroud, Shroud and more Shroud. Newspapers and revues continue to talk about the world's most famous cloth. In announcing the two expositions foreseen for 1998 and for the year 2000, Cardinal Saldarini peremptorily reaffirmed that not only is the Shroud Christ's original burial cloth but that the Holy See has authorised no further experimentation on the sacred cloth since 1988. Consequently any supposed discovery, dating from recent years, is rejected by the Church because, other than by fraud, no one has been able to take samples from the cloth.

However, over and above all past and future controversies, Saldarini is at pains to clarify the message which can reach the men of the year 2000 through this relic.

- **Eminence, what importance do you attach to the carbon 14 testing of the Shroud? And what is your position with regard to the continual «discoveries», and they are not the last, for example, the presence of traces of feminine DNA on the cloth of the Holy Shroud?**

A test of the age of the cloth of the Shroud by the carbon 14 method was called for on several occasions by scientists the world over and, after mature reflection, the Holy See agreed to this demand. The preparation was well conducted, in meetings between specialists, delegates of the Pontifical Academy of sciences and delegates of the Pontifical Custodian, who at that time was Cardinal Ballestrero.

After designating three particularly well qualified laboratories for the test, once the sample of the cloth had been taken and the samples handed to the laboratories, the ecclesiastical authorities withdrew from the procedure for it was no longer within their competence.

WHY SHILLY SHALLY, MY LORD? (cont'd)

Unfortunately, some of the Church's desires, presented as conditions and accepted by the laboratories, were not subsequently satisfied: in particular concerning the secrecy of the experimentation and the communication of the results. The Custodian, however, judged that the substance of the performance was acceptable and, with the Holy See's agreement, he published the results that had been communicated to him. Concerning the results, this is the usual judgement adhered to in the matter of scientific conclusions: when the results have been reached without prejudice and in accordance with a correct procedure, they are accorded a legitimate confidence whilst awaiting further progress which will enable the results to be verified, by confirming or correcting them.

Since then, controversies have arisen from which the religious authorities have kept their distance, whilst recommending the specialists in the discipline to remain open to elements capable of pointing towards an eventual verification.

The supposed «discoveries» which have been made since, in so far as they present any interest, remain problematic, as does the sampling of the Shroud on which the analyses were made. In fact, as was said in a declaration published in a recent press conference, no new samples have been taken since 1988. How can one be sure that the work was done on the Shroud?

As for the DNA analyses, they were made on tiny samples extracted, with permission, in 1978. The presence of feminine DNA was discounted and does not constitute a significant discovery. The presumed DNA on a cloth handled in the course of its history by countless people presents no more than a cross referencing of this history. We know, for example, that the Shroud was entrusted to the Poor Clares of Chambéry for two weeks in 1534 for repairs to the damage caused by the fire of 1532. But there is a long way to go before being able to isolate the DNA of the Crucified who was laid in this cloth.

WHY SHILLY SHALLY, MY LORD? (cont'd)

- **How do you intend to involve the city of Turin and the entire Italian Church in these two expositions of 1998 and the year 2000?**

These expositions originate in the religious and historical nature of the Shroud. On this blessed cloth can be seen images which reflect with exceptional efficacy the ineffable mystery of our redemption, in particular the passion of Jesus. The object of the exposition is to offer more widely to the than of today the announcement of the salvation which comes from Jesus alone, from His love. For centuries, this message has brought forth fruits of conversion and holiness. In the forthcoming expositions, we shall ask the Lord to grant us the same fruits in abundance.

- **How does the programme of the two expositions fit within the Jubilee for the year 2000 and with reference to «the Advent of the IIIrd millennium»?**

The message of the Shroud can also form part of the «new evangelization» to which the Pope often appeals. I am convinced that the nature of its image offers contemplation of a particular «modernity». Never in the past, has a message transmitted through images had such influence on information and on behaviour. The pastoral experience accumulated over these last years confirms how sensitive people are to the message of this «silent witness».

- **What is the significance and the message of the Shroud for us men of the year 2000? Why are continual attempts being made today to demolish its image as well as its veracity and authenticity?**

I can try to sum up in a single phrase the message of the Shroud: «Truly, He could not love us more.» I am speaking of Jesus, of course, and of the palpable proof which this visual form of the sorrowful account substitutes for the Gospel narrative, offered to us when our eyes stop to «read» the details of the sorrowful image which speaks to us from this shroud.

Why the Shroud is so insistently and furiously attacked today is almost incomprehensible: doubtless, through fear of exaggeration in venerating an image, or perhaps because the message of suffering is too hard to accept.

WHY SHILLY SHALLY, MY LORD? (cont'd)

The fury over the theme of authenticity may also arise from a misunderstanding. Many people think that the religious value of the Shroud is subordinate to the fact that historically it contained the Body of Jesus when taken down from the Cross. Given that there are scientific reasons for denying this fact, it is then said that veneration of the Shroud should therefore be abandoned. On the contrary, it is not so. Research into the antiquity of the cloth is in no way complete. But, independently of the antiquity, it cannot be denied - and this remains - that the image preserved for all time by this cloth reproduces the sufferings of the Passion of Jesus, as related by the four Evangelists, especially by Saint John. Furthermore, the way this image was formed is still inexplicable. Consequently, we see how absurd it is to speak of it as a hoax. The simple fact that the Shroud exists, and that it has influenced the piety of fervent Christians for centuries, reminds us of our responsibility as today's Church when confronted by this gift of God.

- **Eminence, beyond the controversy which will doubtless continue between now and the two expositions, what does the image of the Shroud cloth transmit to you personally?,**

If the God-Man who took upon Himself these sufferings could not love me more, I cannot help thinking that my love must also feel daily called to a tireless increase. And as He loved all the brethren like me, in answer to this love, the ordinary way for me also calls for a continual self-giving to the brethren. May the Lord grant that this is truly realised, beginning in my own life.

The «sublime icon of the Passion», as Pope Paul VI defined it in his message for the exposition of 1978, can therefore, according to Saldarini, only make the Christian of today meditate on the «scandal of Christ's Cross.»

WHY SHILLY SHALLY, MY LORD? (cont'd)

AND OUR COMMENTARY

Monsignor Saldarini, Cardinal Archbishop of Turin, Custodian of the Holy Shroud, has announced two expositions of this sacred Relic for the forthcoming years: the first for 1998, the centenary of the discovery which opened the period of scientific examination with the photograph of 28 May 1898. First "test": the photographic negative reveals a full length positive portrait, unsuspected until that time, front and back, of a naked man, covered with all the wounds of a harrowing passion coinciding in every point with that of Jesus Christ. First conclusion, which a hundred years' research in every discipline has only served to corroborate: This image is the work of Jesus Christ Himself left by His Body on this Cloth, on the days of his painful Death, burial and Resurrection. That is why a second exposition is scheduled for the jubilee due to mark the year 2000 of the era of our Redemption, begun by the Incarnation of the Word in the womb of the Virgin Mary.

The Cardinal is answering questions from the representative of Avvenire, the Christian Democrat newspaper, the mouthpiece of the Italian episcopate. The journalist begins by saying that the Cardinal regards this "Shroud" (Sindone) to be the "shroud" (sudario) in which the Body of Christ was wrapped. Unfortunately, nothing of the sort subsequently appears in the Cardinal's words as reported to us. However, His Eminence does not say the opposite either: it is just that everything remains equivocal.

We venture to take the Cardinal's place in giving you the clear and honest answers demanded by frank, scientific truth.

• The journalist begins by posing two questions in one go. The first bears on the importance attached by His Eminence to the carbon 14 dating method. I answer:

What importance? A relative importance. For the Holy Shroud was already dated by the "photograph" of Christ with which it is marked, with a certitude corroborated 1° by the imprint left by the coins, struck under the governorship of Pontius Pilate (26-36 of our era), on the eyelids where they were placed to keep them closed

WHY SHILLY SHALLY, MY LORD? (cont'd)

in accordance with Jewish custom; 2° by the cross referencing of literary testimony and iconography.

There was no urgency therefore. That is why the Church for long resisted the not always innocent "challenges" thrown down by a few scientists, as well as their indiscreet moves. We waited until progress in the method made it possible to provide very sure results through destroying only a tiny piece of the Relic. Furthermore, a procedure was carefully worked out between the Pontifical Academy of Sciences and the three designated laboratories, so that the results obtained might not be the object of any dispute. ***But this protocol was not respected.*** To give only one example: it was agreed that the laboratories would work independently of one another; in this way, a proper concordance of the results would make them truly incontestable; whilst any discrepancy would make it necessary "to search for the error". Now, the secrecy was not respected: the three laboratories worked in close collaboration, coordinated by the British Museum, excluding all participation by the Pontifical Academy of Sciences¹.

Despite that, they failed to obtain coherent results; and the discrepancies between one laboratory and another aroused suspicions, with very good reasons, that the samples had been the object of a "double substitution"². That is why I opened an inquiry. The Church wants light.

As for the second point, the Cardinal gave a worthy answer against every deception.

- In 1978, the Holy Shroud was exposed in the cathedral of Saint John the Baptist under the pontificate of John-Paul Ist. This exposition, which was prolonged for forty three days, drew three and a half million pilgrims, not only from Italy but from the four corners of the world. We have only to present this holy relic in the same way for the devotion and veneration of the faithful amid solemn ceremonies, to see the crowds once again flock to receive the graces of redemption which flow from the Sacred Heart of the Divine Master, and of His Precious Blood shed on this Cloth. For the man of today, as for the man of yesterday and tomorrow, there is no better means of salvation.

WHY SHILLY SHALLY, MY LORD? (cont'd)

- By means of the two expositions, all human beings our brothers, for whom Christ shed His Precious Blood, are summoned to come and contemplate and venerate the holy «*standard of our salvation*» as Saint Francis de Sales liked to call the Holy Shroud. The jubilee proclaimed by Pope John-Paul II on the occasion of the IIIrd millennium is an invitation to celebrate the two thousandth anniversary of the Incarnation of the Word, come to take flesh and blood in the womb of the Blessed Virgin Mary, to offer them in sacrifice for our salvation. We would like to give particular prominence to these two manifestations so that the divine truth may shine in the eyes of the world, and that the Church may experience a rebirth of our Catholic devotion towards «*our great Relic*», as the Bishop of Geneva again said, especially towards the Holy Face contemplated on that Relic, the world's protection in face of the dangers mounting on the horizon of the year 2000.

- **What significance?**

The Holy Shroud is the proof of Christ's Death and Resurrection. Visible on the Holy Shroud are blood stains composed of haemoglobin, which give a positive result when tested with albumin. They testify to the wounds of a real human body, laid in this Sheet for burial, leaving its imprint, after having been scourged, crowned with a cap of thorns pressed into the temples and onto the nape of the neck, and finally nailed to a cross by the wrists and the instep of the feet. And *post mortem*, pierced in the right side.

This clearly visible human form is the image of Jesus Christ. Both supporters and opponents of authenticity are in agreement over that. Opponents especially, in thinking that the image was created by an artist. But it is impossible, and that is what exasperates them. There is no need to look further for an explanation of their fury. The hoax perpetrated on the occasion of the 1988 carbon 14 dating was their last invention. At the same time, it signalled their defeat. For this fraudulent dating amounts to a proof!

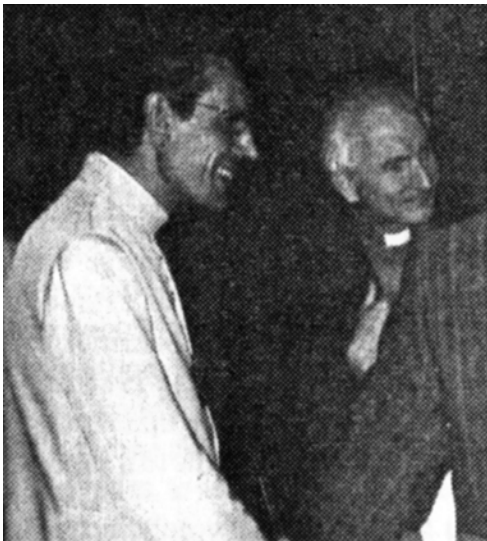
- **What message?**

Jesus Christ has re-entered our laboratories in triumph with his awkward Cross! But also with the observable fact of his resurrection,

WHY SHILLY SHALLY, MY LORD? (cont'd)

of which the Holy Shroud is the permanent document, the quasi photographic "record": the mystery of this scorching, of this light carbonisation of the linen, probably by thermic radiation. It testifies to the sudden energy given off by this Body, in the flash of the Resurrection.

- It is for each to say «what the image on the Shroud cloth transmits to him personally». For my part, I shall transcribe here the most striking illustration of the message of the Holy Face confided to me one day by our Father founder and brother Georges de Jesus: «One day, it happened that the two images of Saint Thérèse on her death bed and of Christ came together in my breviary. The sudden message came as a shock: it was the twofold sleep of two giants having died for each other. A sleep of love, of a death through love, of a death of love, in the full act of perfect love. The image of the Bridegroom next to that of the bride who has silently given her life two love for Him, are two solitudes meeting, two faces, two bodies, the one already come back to life, the other availing the resurrection for their eternal nuptials.»



Bro Bruno Bonnet-Eymard of
France with (in background)
Fr Heinrich Pfeiffer of Rome

POLLENS ON THE SHROUD: A STUDY IN DECEPTION**by Dr Alan Whanger, Duke University, USA**

This is an article written in response to the article written by Joe Nickell entitled "Pollens on the 'Shroud': A Study in Deception". This was originally published in the magazine SKEPTICAL INQUIRER, Volume 18, Summer of 1994, and was reprinted in SHROUD NEWS, No. 91, October 1995. When I first read this article in the SKEPTICAL INQUIRER I was incensed by the gross errors in it as well as the *ad hominem* character vilification of Dr. Max Frei. I did not bother making any kind of response at that time since most sindonologists are not likely to expend their time reading that particular magazine anyway, and I felt that most of those who-do read it are not likely be really interested in the facts. Since it has now been read by a wider audience, many of whom may not be certain about some of the issues raised, I feel that it is appropriate to comment on the Nickell article since I am familiar with a number of things cited in it. I feel that this may be especially relevant now with the recent upsurge of articles, books, television shows, internet pages, and other communications which are trying rather desperately to debunk the Shroud and ridicule those who study it carefully or believe it to be authentic. This latter group is described by Nickell in the article as "a small, but vocal, group of religious enthusiasts, including a few scientists".

The pollen studies are a particular anathema to the Shroud debunkers since they indicate that the Shroud was in Jerusalem and the regions of Edessa and Constantinople (in modern Turkey), and originated in that area since most of the identified pollens come from flowers that grow in the Middle East, but do not grow in Europe (Frei, 1982). This would tend to confirm the historical route of the Shroud as detailed by Ian Wilson (Wilson, 1978). The very unusual wide spectrum of plants represented would indicate that it had been in Jerusalem where there is a unique variety of plant types within a few miles radius. In addition, Dr. Frei noted that none of the many pollens that he removed from the Shroud by his sticky tapes were either glued to the cloth with tempera or covered with tempera, which he felt was strong evidence against the possibility of the Shroud being a painted fake. In addition, our own research in detailed studies of the images on the Shroud has shown the faint images of hundreds of flowers that were banked around the body at the time of the enshrouding. These images, which we first found in 1985, are so clear and detailed that we feel that we have been able to identify with reasonable certainty 28 varieties of plants (Whanger, 1989). Of these 28, twenty grow in Jerusalem, and the other eight grow within 12 miles of Jerusalem. These flower images were obviously much clearer many centuries ago, since they are very accurately portrayed on sixth century icons and seventh century Byzantine coins. Of these twenty-eight plants, Dr. Frei had identified the pollens of twenty-five of them or closely related species (pollens may be very difficult to identify to the exact species). Nickell states that "it now appears that the pollen study was an exercise in deception--self-deception, at best, if not outright scientific fraud."

It would be well to review the background and work of Dr. Max Frei-Sulzer since it would be difficult to get an accurate idea from the Nickell article, as he describes Frei as having once taught an evening course in microscopic techniques in the Zurich University extension system and calls him a "freelance criminologist " A criminologist is a sociologist type who studies crime and

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criminals, and Frei was primarily a "criminalist", an expert in the scientific study and evaluation of physical evidence. Dr. Werner Bulst, who knew Frei very well, wrote a much more accurate description of his background (Bulst, 1984). Dr. Frei had a doctoral degree in botany, and he founded the renowned scientific department of the Zurich Criminal Police and was its director for 25 years. He was a lecturer in criminalistics at the University of Zurich and a guest professor at the Staff Academy of the German Police at Munster. He developed and introduced new microbiological methods into criminalistics which are widely used. Of particular note, he developed the sticky tape method of obtaining samples from various objects by pressing clear adhesive tape onto or into an object and then putting the tape on a slide for microscopic examination of the various particles that were picked up. This often gives very valuable information about the whereabouts and the circumstances of the object of study.

Dr. Frei had been invited by the Archbishop to Turin in 1973 during a brief showing of the Shroud to verify the accuracy of the photographs that had been taken in 1969. He was invited on the basis of his wide reputation as a criminalist, since as a Zwinglian Protestant he was certainly no enthusiast for Catholic relics. He noted at that time on microscopic examination of the Shroud that in the dust deposited on the Shroud there were pollen grains. Since examination of pollen grains was a special field of his that he had been doing for 25 years, he requested and was given permission to take twelve sticky tape samples from the Shroud. On examining these tapes, he found large numbers of pollen grains with 48 different varieties, but he was not able to identify most of them, an indication that they were not of European origin (Frei, 1982). Dr. Frei extracted each pollen grain from the sticky tape, cleansed it, and then mounted it in glycerine jelly on a slide so that it could be examined in detail under the light microscope. He knew that the scientific method for identification of pollen grains is the direct comparison with a ripe pollen in the same medium from a species to which the unknown pollen might belong. He consulted the books and articles as well as pollens from private collections and public herbariums, but these gave help with only a few of the pollens. Therefore he undertook systematic studies of pollen-producing plants growing in countries where the Shroud might have been exposed, assuming that it might be authentic (Frei, 1976). While Nickell writes that Dr. Frei "reportedly traveled through the Near East" and worked "between jobs", Frei devoted all his spare time over nine years and had enormous expenses for seven expeditions during his vacations to the Middle East to gather botanical specimens to get pollens for study and comparison. Notwithstanding, Nickell writes about "criticisms from various quarters" and some "faulted Frei's work for apparently failing to use control samples."

In 1978 Dr. Frei took part in the scientific study of the Shroud following the public exhibition in that year. He took 27 sticky tape samples from various areas on the Shroud, using a localizing grid devised by Professors Baima Bollone and Dr. Aurelio Ghio. In addition he obtained samples from the reliquary from Professor Bollone and from vacuumed samples from Giovanni Riggi. He did not remove any pollen samples from the 1978 tapes, but found four additional pollens in the other materials. A second set of sticky tapes were taken by the Shroud of Turin Research Project (STURP) at the same time, using a technique very different from that of Dr. Frei. The STURP tape specimens were taken with a mechanical applicator which picked up materials from the surface of the Shroud and the crowns of the threads, while Dr. Frei pressed his tapes firmly with

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his fingertip into the fabric itself to pick up material from between the threads. Only rare pollen grains could be found on the STURP tapes.

As Dr. Frei writes (Frei, 1982), his intensive study and pollen specimen gathering resulted in the number of unidentified pollens diminishing slowly but steadily. In addition to his light microscope, he used the scanning electron microscopes at Vercelli and Zurich to help confirm his pollen identifications. He was preparing a manuscript for publication when he unfortunately died in 1983 before much of his work could be completed. He had made presentations of his work at the International Congress of Shroud Studies in Turin in 1978 (Frei, 1978) and at the National Convention of Shroud Studies in Bologna in 1981 (Frei, 1981). He had been elected President of this latter meeting.

His widow, Mrs. Gertrud Frei-Sulzer, wished for her late husband's work to be carried on. In January 1986 she made five of the slides from the 1978 collection available to the Association for Scientists and Scholars International for the Shroud of Turin (ASSIST) group in response to a request for information about the collection from Paul Maloney (Maloney, 1989). He did considerable microscopic study on the loaned tapes, noting substantial numbers of various pollens and plant parts, mostly in the lead part of the sticky tape where Dr. Frei had pressed firmly with his finger into the fabric. On one tape, he had counted more than 275 pollens. In 1987 Mrs. Frei decided to make the entire collection of Dr. Frei's slides, botanical specimens, manuscripts and related materials that she had in her possession available to the ASSIST group. The transfer took place in Thalwil, Switzerland on 15 July 1988 in the presence of several individuals including myself to witness, catalog, and document the collection and the process. The sticky tape slides were sealed in her presence for their transportation back to the United States. We shall return to this part of the story, however, after examining some of the other allegations that Nickell makes in his article.

The first sentence of the article starts "Despite its exposure as an artistic forgery..." despite the fact that the presumably established exposure is mostly the brain-child of Nickell, McCrone, and a small, but vocal, group of skeptics, including a few scientists. One of the main goals of the 1978 study of the Shroud by STURP was to determine how the image got on the Shroud. Extensive studies, published in the refereed scientific literature, showed that there was no paint, dye, or any other pigment that had anything to do with the image on the Shroud (Jumper et al, 1984). Dr. Walter McCrone, based on his examination of the set of sticky tapes taken by the flat application of the sticky tape to the Shroud by the STURP group, saw some fibers with pigments and red particles on them, and therefore concluded that the Shroud was a painting (McCrone, 1980). He and Nickell continue to ignore the fact that there were about 50 so-called "true copies" of the Shroud, which were painted and then laid down on top of the Shroud during the Middle Ages. Experiments have shown that this process causes some of the fibers of the painted copy to be transferred to the surface of the other cloth, and of course under the peculiar conditions of the application of the "true copies" to the Shroud, more of these translocated fibers would be found in the body image areas. McCrone claimed that the bloodstains were painted with vermilion and that there was collagen tempera medium for the pigments (McCrone, 1990). Extensive microscopic, chemical, and physical tests by a number of highly qualified researchers on the Shroud and on the same tapes that McCrone examined, did not find what McCrone claimed, and

POLLENS ON THE SHROUD: A STUDY IN DECEPTION (cont'd)

came nearly unanimously to opposite conclusions (Heller and Adler, 1981) The Shroud image has been studied by professional artists who state that the Shroud demonstrates no known artistic technique, and has anatomic, physiologic, and technical data unknown in the Middle Ages (Piczek, 1994).

Nickell dogmatically states that the Shroud " lacks any provenance before the 1350's" in spite of the abundantly published and illustrated data showing that the facial image of the Shroud was well known in the early centuries of this era, and served as the basis for most depictions of Jesus from the sixth century on. Icons and coins from that time copy the Shroud Face with incredible fidelity, far exceeding the forensic criteria for determining two faces to be the same (Wilson, 1986). Not surprisingly, Nickell endorses the 1988 carbon 14 dating which indicated that the Shroud was of medieval origin. He does not mention that for reasons still unclear, the entire protocol for the carbon 14 testing, which was set up by 22 carbon dating experts in 1986, was rejected shortly before the samples were to be taken, and only a single sample was taken from an area close by a burn mark and a water stain. On viewing the videotape of the taking of the single sample, it is clear that the sample included the heavy seam which has led many to think that there is a side strip added to the Shroud. The x-rays taken of the Shroud in 1978 clearly show that the seam attaches the Shroud to the backing cloth, and that there are apparently threads coming out from the seam into the body of the Shroud, indicating that that area had been rewoven. As far as I know, there are no written records telling just when this seam was put in, but the earliest I could clearly discern it on artistic copies was 1693. This information and photographs were released to the media in 1988, but if Nickell was actually unaware of this, this might be understandable in light of the media in general refusing to carry anything positive about the Shroud (Whanger, 1988; Whanger, 1989).

Nickell cites several sources supposedly quoting Frei as making statements that would not be consistent with the evidence. Some of these were from overenthusiastic supporters, such as in Humber (1978) and Wilcox (1977), who quoted Frei as saying that he could state with certainty that the Turin shroud dates from the time of Christ. In a manuscript written in 1976 about his pollen studies, Frei concludes, "It [the Shroud] is a cloth that has been in Palestine, Turkey, France, and Italy. These data confirm the geographic part of its history; that is the only aspect verifiable with the palynographic [pollen study] method" (Frei, 1976). Frei wrote in the paper he delivered to the congress in Turin in 1978 (Frei, 1978): "In fact, the study of fossil pollen in alluvial lake sediments (Lake Tiberius) and marine sediments (Dead Sea) as performed, among others, by A. Horowitz and M. Rossignol confirms that these species were present in these areas in Christ's time and also before and after. A more precise dating might occur in the future if we find the pollen of a plant extinguished in the last two thousand years. Contrary to certain sensational news, without foundation, - in the press, I have not been so lucky in my studies. As of now, I can only confirm that I did not find on the Shroud any item which must be considered as a proof counter to an about 2000 year old dating." The conclusion that Nickell draws in his paper, however, is that Frei "withdrew this rash statement" rather than the much more obvious conclusion that Frei was misquoted, since he clearly stated his position in writing in scientific papers. Most of us who have dealt with Shroud issues in the media are well aware of the risk of, being misquoted or misinterpreted by friend and foe alike.

POLLENS ON THE SHROUD: A STUDY IN DECEPTION (cont'd)

Nickell further reports on "problems with Frei's credibility" and his reputation suffering a "severe blow" because of an episode reported by a M. Browning (1983) in the *Lexington Herald-Leader* newspaper of Lexington, Kentucky that "representing himself as a handwriting expert, he (Frei) pronounced as genuine the notorious 'Hitler diaries,' which were soon exposed as third rate forgeries." Frankly, I do not know what Frei might have actually said about the Hitler Diaries since I have not seen anything in his own writings about those diaries or his claiming to be a handwriting expert. If, however, making a mistake in analysis or opinion causes problems with credibility and reputations suffering a severe blow, both Nickell and McCrone are indeed in serious difficulty. Nickell widely publicized his technique of daubing a dry powder mixture of myrrh and aloes on a cloth fitted over a bas-relief face which he claimed "solved" the issue of how the image was formed (Nickell, 1978; Nickell 1979). Not only was the resulting image crude and unable to show any three dimensional properties on computer image analysis, but it was publicly denounced at a Shroud Conference in Elizabethtown, Pennsylvania, in February 1985 as being microscopically incorrect by no less a person than Walter McCrone (McCrone: Video, 1985) just after Nickell had given a presentation there on his theory.

McCrone gained widespread prominence by his work with the Vinland Map of Yale University, which he examined for authenticity in 1973 microscopically and chemically. He came to the conclusion that the map was a forgery made by drawing lines with an ink containing 50% anatase, a form of titanium dioxide not invented until the 1920's (McCrone, 1974; McCrone, 1976). The map was re-examined in 1987 by Cahill and his group (Cahill, 1987) by microscope and proton milliprobe at the Crocker Historical and Archaeological Projects, Crocker Nuclear Laboratory at the University of California at Davis, where they have examined hundreds of ancient documents. They totally disagreed with McCrone's findings, determining that the ink was typical of other documents of the 15th century era. McCrone reported an average level of 27,600 ng/cm² of titanium and Cahill and his group found only 2.0 ng/cm², a difference of 13,300 times. In other words, the retested content of titanium in the ink was only 0.007% of the amount reported by McCrone. On February 13, 1996, Wilford (1996) in the *New York Times* reported on a meeting at Yale celebrating the vindication of the authenticity of the Vinland map and the publishing of a book on it. Although he was not invited to the meeting, McCrone showed up anyway, and reportedly passed around a letter defending his views, and stating that if he had been asked, he would have given a contribution that he would have titled, "The Vinland Map, still a 20th-Century Fake." Dr. Wilcomb Washburn, director of American studies at the Smithsonian Institution in Washington, said, "I think the evidence is clearly on the side of authenticity. Those who are charging forgery must now assume a defensive role and respond to those previously on the defensive."

Now we return to the story of the Frei tapes and materials that were brought to the United States in July 1988. In order to verify that the tapes had actually come from the Shroud, a meeting was arranged for McCrone to review all of the 26 tapes microscopically in the presence of 24 witnesses watching the proceedings directly and the microscopic findings on video monitors. Tapes from the Shroud have a peculiar mixture of linen fibers in various stages, other fibers, and other materials which led McCrone to state that "they had definitely come from the Turin shroud."

POLLENS ON THE SHROUD: A STUDY IN DECEPTION (cont'd)

Nickell quotes from letters and conversations with McCrone in his article, including the following: "At the same time I was interested to note that there were very few pollen grains; perhaps one per square centimeter, which was pretty much what I had observed on my set of tapes [presumably referring to the STURP tapes that he had previously examined.] Considering that figure and the number of tapes and their length, there would not have been much more than 100 pollen grains all total on his or my tapes. It is difficult to see how he could have found an assemblage of pollens representing 49 different species of Palestinian pollens on a piece of cloth that has spent the last 650 years of its life openly exhibited and much handled in France and Italy. I'm afraid that Max Frei was like so many other members of the STURP group who were so convinced by their faith the Shroud was real that they were just as convinced that whatever was needed on the Shroud to prove that fact must be there, and if they didn't literally find it they regarded this as their error rather than a reality in terms of what the Shroud actually shows." Nickell further quotes McCrone as, "I have looked back over my notes [from the above described examination of the tapes] and see that I mentioned, marginally, the presence of very few pollens. Only 10 plus or minus on all of the tapes other than 6 Bd which has dozens of them. I also noted that those on . 6Bd were located within 2-3 square millimeters of the tape. At the time I remember saying diplomatically that they were "contamination." It is very doubtful that they were present on the Shroud itself and sampled by Max. The fact that they are then present indicates that the tape had to be pulled back so that they could be introduced and I see no good reason for that except skulduggery. So I can't be sure that Max really adulterated the tapes from that bit of evidence, but...it is more than a little surprising." Nickell concludes his article with the following: "The implications of McCrone's revelations are devastating to authenticity advocates — or should be. However, experience shows they are never dissuaded by negative evidence."

As Nickell notes in his article, the proceedings were videotaped, and presumably he assumes that they would support what McCrone says. There were two sets of videotapes made to document the entire proceedings, one from a camera on the microscope to show exactly what McCrone was looking at, and the other to record everything else that was going on. I reviewed each of these sets of tapes, which were over five and a half hours in length each, along with Phil Dayvault, a former Physical Science Technician and special agent with the FBI, with numerous years experience in microscopic comparisons and evidence evaluation. We took detailed notes on the entire proceedings, and often looked at the tapes in slow motion or frame by frame in order to examine everything as carefully as possible. McCrone would move each slide by hand on the stage of the microscope in an irregular fashion so to scan the slide to get a general idea of what was on it. Before the examination began, Paul Maloney, who had already examined four of the tapes in some detail, gave an introduction, including the fact that he had found large numbers of pollens on the slides, but that most of them were in the lead part of the tape where Frei had pushed the tape into the fabric with his finger. Curiously, Nickell notes that: "McCrone, who did not examine the leads during his marathon inspection, is suspicious of the excessive pollens reported in those unlikely areas, stating that, at best, they would represent 'contamination' of some sort."

The following is the result of having reviewed the documentary videotapes, recording the results of those pollens identified as such verbally by McCrone, those objects that McCrone said might possibly be pollens, those objects that Dayvault and I identified as rather clearly being pollens but

POLLENS ON THE SHROUD: A STUDY IN DECEPTION (cont'd)

were ignored by McCrone, and those objects that we felt might have been pollens, but were either misshapen or else were moved by so quickly that the image was blurred. Keep in mind that the primary purpose of the procedure was to scan the slides for general identification and not to study the pollens as such. In total, McCrone identified 43 objects as clearly being pollens and 11 as being possible pollens. We identified 43 other objects as definite pollens that McCrone did not comment on, and another 64 objects that might possibly be pollens. On tape 6Bd he identified 9 pollens definitely, and two possibles. On tape 4Bd, which was the last one examined, it was suggested that McCrone look at it more carefully to see how many pollens could be seen on closer scrutiny. On that tape alone, McCrone positively identified 15 pollen grains, and we identified an additional 6 positively, and 8 possibles. The total of the definite pollens identified by McCrone and us is 86, with an additional 75 possible pollen grains. These results obviously do not jibe well with what McCrone reported in the paper as being in his notes.

On tape 6Bd there were a number of pollens closely clustered, which McCrone interpreted as the tape having been pulled back to introduce extraneous pollen as an act of "skulduggery." Relying on the work of Maloney and the photographs of Barrie Schwartz who documented the 1978 studies, we were able to localize the place where that particular tape was taken. Although Frei was unaware of the faint flower images on the Shroud, he happened to take tape 6Bd right in the middle of a cluster of *Cistus creticus* flowers, exactly on the center of one. A palynologist, an expert in pollen identification, had previously and independently looked at slide 6Bd, which had been previously loaned to Maloney by Mrs. Frei, and identified probable *Cistus creticus* pollens on it. On August 12, 1988, I sent to McCrone a letter and a videotape illustrating a number of our relevant findings. He never acknowledged this, and has given no subsequent indication that he was aware of the findings clearly illustrated in the tape or the implications of them. Instead, McCrone continues to vilify Shroud researchers as religious zealots seeing what they want to see to prove their points, and of virtually accusing Frei of skulduggery and adulterating the tapes as noted in Nickell's paper. In the paragraph illustrating a photomicrograph of 6Bd showing several pollens in the same microscopic field, Nickell comments, "Clean gloves should have left no pollens in this area." His summary states, "It now appears that the pollen study was an exercise either in self-deception or outright scientific fraud." Perhaps related to this, I have actually heard McCrone state publicly that he stakes his professional reputation on the Shroud being a fake.

I would leave it to the reader to decide whether deception or fraud has taken place and who has perpetrated it.

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UPDATING RECENT STUDIES ON THE SHROUD OF TURIN

by **Dr Alan D. Adler, Western Connecticut State University, USA**

An important summary by the highly respected Professor of Chemistry, a member of the STURP investigation team in 1978 who identified the blood on the Shroud and has written many articles. Reprinted from the *American Chemical Society* 1996 (Chapter 17)

The Shroud of Turin, a linen cloth alleged to be the burial shroud of Christ, has been precisely radiodated to the 14th century. Nevertheless, its status remains controversial. Is the radiodate accurate? Are the blood images seen on the cloth derived from contact of the cloth with a wounded human body? Is it a painting? If not a painting, what is the mechanism of its formation? Some of the latest research attempting to resolve these matters is presented and reviewed.

The Shroud of Turin can be unequivocally historically traced to the mid-14th century (1). Because it was alleged at that time to be the authentic burial cloth of Christ, it has always been an object of controversy. This 4.3 X 1.1 m linen cloth bears both complete head-to-head, frontal and dorsal, straw colored, "negative" body images of a crucified man with blood colored wounds and scourge marks in accordance with Biblical description of the Crucifixion. The body images are bracketed the entire length of the cloth by parallel burn and scorch marks from fire damage incurred in 1532. Waterstains from extinguishing this fire are also evident, as are patched areas from repairs carried out in 1534 prior to the entire cloth being stitched to a backing cloth to support the damaged original. There is a continuous seam along one side of the cloth producing a "side" strip with rectangular pieces of missing cloth at both ends of this strip. The main body of the cloth adjacent to these missing cloth areas shows selvage edges indicative of repair. There is no historic record of why or when this repair and seam were applied to the original cloth.

In 1978 a group of investigators, Shroud of Turin Research Project (STURP), carried out several on-site investigations of the Shroud at its repository in Turin and also took several sticky tape samples from designated areas of the cloth for further off-site studies. This work and the subsequent research has been summarized in several publications (2-4). STURP's major conclusions were that the Shroud was not a painting, the body image chromophore was an oxidation product of the cellulose of the linen fibers comprising the cloth, and the blood images were blood-derived materials produced from contact of the cloth with a wounded human body. A microscopical investigation of the STURP sticky tape samples by an independent investigator came to the opposite conclusion that the Shroud was a painting with the body images composed of iron oxide in a gelatin protein binder and the blood images composed of the same pigment with the addition of considerable cinnabar (HgS) with traces of calcite (5), commonly found components of medieval paint pigments. As it was clear that science could never authenticate the Shroud as the burial cloth of Christ, but could positively disauthenticate it, STURP strongly recommended and supported a radiocarbon dating test (4).

Radiocarbon Dating

Three laboratories in a collaborative study independently radiodated samples from the Shroud of Turin by the Accelerator Mass Spectroscopy (AMS) method and reported a reasonably precise 14th century date in apparent agreement with its unequivocally

UPDATING RECENT STUDIES ON THE SHROUD OF TURIN (cont'd)

known historic record (6). Unfortunately, a detailed protocol for sampling the Shroud, assuring both precision and accuracy, recommended by a convened group of consultants (7), was not followed. Only a single sample was taken in the lower corner of the main cloth of the frontal image below the so-called sidestrip from the selvage edge in an obviously waterstained area just a few inches from a burn mark. The selvage edge was trimmed off before portions of the sample were divided among the participating laboratories. Whether such an obviously contaminated sample is truly representative of the rest of the cloth is clearly questionable and the accuracy of the reported date is certainly doubtful.

To assess this question we have carried out further spectroscopic investigations of samples from the STURP sticky tapes (Adler, Selzer, and DeBlase; technical details submitted for publication elsewhere). Nineteen assorted fibers representative of non-image, waterstain, scorch, image, backing cloth, and serum coated fibers were extracted from the tapes and characterized by previously reported methods (2). These were compared with fifteen single fibers taken from three threads from the radiocarbon sample. Similarly, two blood samples (previously designated as globs) were extracted from the tapes and compared against several types of blood controls. The blood controls included two simulacra: a traumatic blood clot exudate (whole blood diluted with bilirubin-enriched human albumin) and mineral simulated blood (iron oxide, cinnabar, and a trace of calcite suspended in gelatin). These samples were all examined by Fourier Transform Infrared (FTIR) microspectrophotometry and the fibers were also studied by scanning electron microprobe. Dried films of the two blood simulacra were also studied by Ultraviolet-Visible (UV-vis) spectrophotometry. Some typical FTIR spectral patterns of these samples from this study are shown in Figures 1 and 2.

The patterns seen in Figure 1 are all distinguishably different from one another clearly indicating differences in their chemical composition. These compositional differences were further confirmed by peak frequency analysis utilizing the computer software that generates the spectral data. In particular the radiocarbon samples are not representative of the non-image samples that comprise the bulk of the cloth. This difference was also supported by the scanning electron microprobe data that showed gross enrichment of the inorganic mineral elements in the radiocarbon samples, even compared to the waterstain fibers taken from the bulk of the cloth. In fact, the radiocarbon fibers appear to be an exaggerated composite of the waterstain and scorch fibers, thus confirming the physical location of the suspect radiosample site and demonstrating that it is not typical of the non-image sections of the main cloth. How much these differences in chemical composition actually affected the accuracy of the radiodate is not clear. However, these data are consistent with a recently proposed mechanism in which it has been experimentally demonstrated that conditions comparable to those suffered by the Shroud in the 1532 fire can produce a large error in radiodating by large kinetic isotope effects (8). Alternatively, considering the presence of the selvage edge, this area may contain newly woven material as a repair.

Some recent image analysis studies comparing the blood marks on the Shroud of Turin with those on the Cloth of Oviedo also cast doubt on the accuracy of the Shroud's radiodate (Whanger, Duke University, personal communication, May 1994). The Cloth of Oviedo, alleged to be the *sudarium* associated with Christ's death, contains blood images similar in appearance to those on the Shroud, and can be historically traced to the 7th century (9). In Figure 3 the equally scaled dorsal head wound marks on the two cloths are compared with one another. The similarity of these two complex patterns is evident enough to suggest that these two cloths were in contact with the same wounded body, presumably within the same short time period.

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Should further research reveal stronger relationships between these two relics, the accuracy of the 14th century date of the Shroud will be clearly doubtful, as the Cloth of Oviedo is considered at least 7th century.

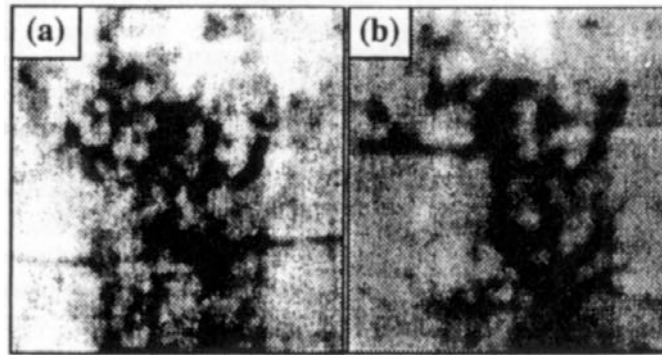


Figure 3. Comparison of dorsal head wound marks on the Shroud of Turin (a) and the Cloth of Oviedo (b).

Blood Images

Analysis of the FTIR data in Figure 2 compared with various controls shows that bilirubin can be spectrally detected in both the blood samples and the yellow serum coated fibers in agreement with the previously reported chemical data (2). The pattern match of the simulated clot appears only fair, but spectral analysis utilizing the computer software shows that reducing the protein pattern and increasing the bilirubin pattern makes a very good fit to the blood sample pattern. Conversely, the mineral simulated blood pattern is a complete mismatch except for the presence of protein. Bilirubin is clearly required to obtain a proper spectral match.

The same conclusions are drawn from the near UV-vis spectra of the two simulacra. The clot simulation is in good agreement with the previously reported spectra of Shroud blood specimens and that taken from the on-site examination of the blood images on the whole cloth matching the observed peaks at 420, 450, 520, 580, and 630 nm (10). Increasing the amount of bilirubin in this simulacrum will also improve the fit as with the FTIR data. However, the mineral blood simulation showing only two broad low peaks at 470 and 514 nm is again a complete mismatch. This is not surprising as it should be recalled that the two on-site X-ray examinations of the Shroud did not reveal the presence of any mercury compounds, particularly in the blood image areas (11, 12). Thus these two new pieces of spectral evidence completely reinforce all the previous chemical, immunological, and forensic work demonstrating that the blood images on the cloth are blood-derived materials produced from contact of the cloth with clotted blood wounds on a human body (2-4) and are not composed of an artist's applied mineral pigment mixture (5).

Body Images

Peak frequency analysis of the FTIR data also shows that the image fibers contain more conjugated carbonyl absorption than the non-image fibers, consistent with previous identification of the chromophore with a cellulose oxidation product (2-4). Similarly, although the spectral presence of protein in the characteristic amide

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absorption regions is readily seen on the serum fibers, it is not detectable on the image fibers, as stipulated by the painting hypothesis. This supports the previously published work refuting the painting hypothesis (2-4).

Numerous copies of the Shroud of Turin exist and it has now been thoroughly historically documented that several of these painted copies were "sanctified" by being pressed to the original (13). This process would clearly contaminate the Shroud with artist's materials by contact transfer. Therefore it cannot be maintained that the Shroud is a painting simply on the basis of the microscopical detection of such materials (5) in the face of the large corpus of evidence against such a simplified explanation (2-4). The accumulated physical, chemical, and forensic data do not support the contention that the images on the Shroud of Turin are paintings. In particular, the image studies very clearly rule against this supposition (14).

Image Formation Mechanisms

Establishing that the Shroud is not a painting still allows the possibility of its production by some other type of artistic rendition technique. However, many possible formation processes have been tested against the observed properties of this image and have all been found inadequate in some way if they are to be accepted as the explanation of this complex object (3, 14, 15). Image studies have shown that the body image and the blood images are not always in stereometric register (14, 16). As the blood can only have been transferred onto the cloth by contact, this implies that the body images were produced by some type of non-contact mechanism (14). Some image studies (14) would suggest some type of radiational or energy transfer type mechanism. However, the nature of this process at this point in time remains a mystery. This should not be interpreted as proof that the image was produced by some supernatural process, but simply reflects the present state of our knowledge of this interesting object. Hopefully, future studies will not only resolve this mystery, but will provide a sound basis for undertaking the preservation and conservation of this cloth and its images (17).

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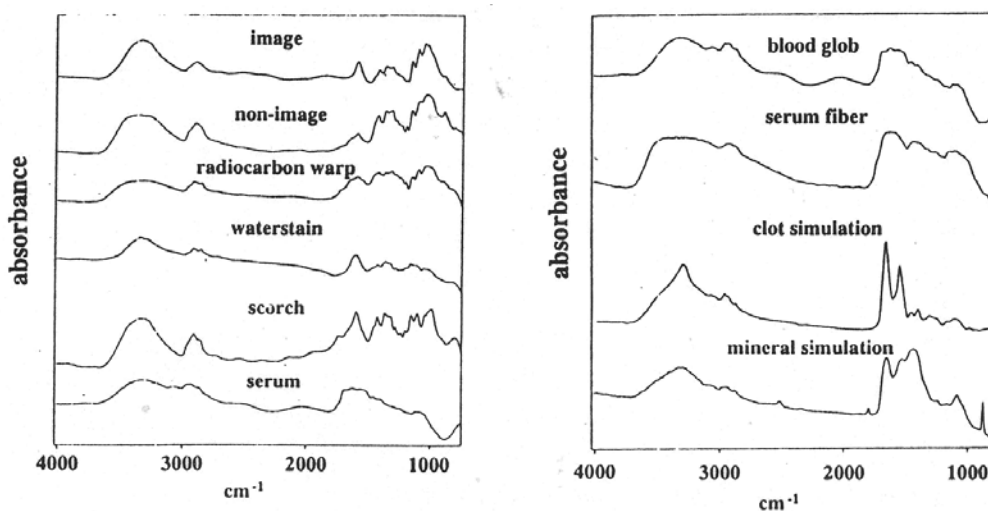


Figure 1. Typical FTIR absorbance patterns of single fiber samples of the Shroud of Turin.

Figure 2. Typical FTIR absorbance patterns of blood samples of the Shroud of Turin compared with blood simulacra.



Dr Alan Adler

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*) and editor of several others, began sending a few notes about current developments in the study of the Shroud of Turin (Sindonology) for a small circle of interested people in his home country of Australia. He didn't expect it to go beyond a few issues.

Today, the bulletin, now highly acclaimed, reaches subscribers all over the world and is written, produced and disseminated more quickly than any other Shroud publication in the English language. 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 which gives 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 and knows numerous Shroud researchers in many countries. His quest for Shroud information became, as he described it, "a passionate hobby". He took 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 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 Board member of the US 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 (ESSJ). He has made a number of original contributions to Shroud research has presented major papers at international Shroud conferences has written numerous articles and has given hundreds of broadcasts and telecasts on the subject in many countries.

The list of *Shroud News* subscribers continues to increase internationally and it has been described many times as one of the best available. *Shroud News* comes out six times a year. Its production is obviously privately subsidised as we request a subscription in Australia of only \$6 for six issues posted. The USA subscription is \$12 (posted airmail - there is no longer any surface mail from Australia). Postage to other countries varies. ALL back issues are available for \$1 (US or Aust) each plus postage. The famous 50th issue is \$3 plus post. Customers should note that as it costs us \$8 to negotiate each foreign cheque we request all payments be made in currency banknotes of your country or charge to Visa, Master or Amex cards.

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