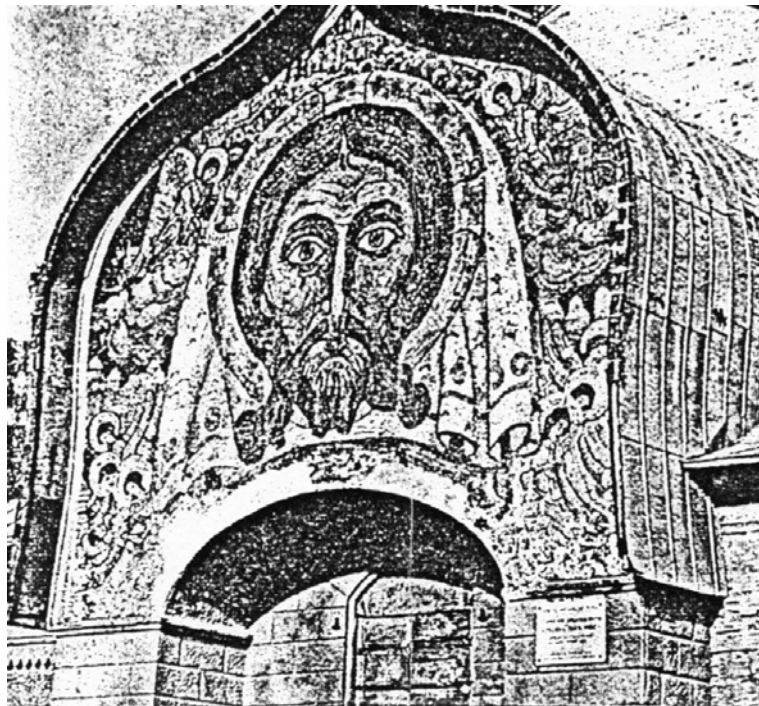


ISSUE No 56
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A NEWSLETTER ABOUT THE HOLY SHROUD OF TURIN
edited by REX MORGAN
Author of PERPETUAL MIRACLE and SHROUD GUIDE



Icon of Christ at the Holy Spirit Chapel, Talashkino
near Smolensk in Russia

IN THIS ISSUE:
THE SECOND PART OF REX MORGAN'S SUMMARY OF
THE PARIS INTERNATIONAL SHROUD SYMPOSIUM

EDITORIAL

As I said in the last *Shroud News*, my summary of the Paris International Symposium became far too long for that issue and I shall be fortunate to get it all into this one. But I think that what was said by so many people at that prestigious gathering was well worth bringing to our worldwide readership. Clearly the official proceedings of that conference will not be published for some time and, in any event, it was said in Paris that every paper published will have to be edited so we shall never have all the material.

As we come to the Christmas season our focus of attention is again on Christ, without whose existence we should have no Shroud to be interested in, whether the Turin Shroud is authentic or not. And I am often surprised by the interest in Christmas shown by numerous non-Christians in many parts of the world. Admittedly this is frequently a commercial exercise but I am always amazed by the way the people of, for example, Thailand, (a country to which my interests take me often) take to it. Only 0.6% of the Thai population of 60 million is Christian, almost all the rest are Buddhists, and yet in the capital, Bangkok, every major building has traditional coloured lights and Christmas decorations to rival Regent Street, there are masses of Christmas parties and even traditional European carols are sung in Thai and pumped through every Musak outlet available. Certainly much of this is aimed at the Western tourists who abound there in the Thai winter (when the temperature is down to about 85 degrees most of the time) but they all seem to exchange "Christmas" presents and even have a "shopping season" and get into the joyous spirit of it all.

But, for those of us who are Christians, we think of the traditional simplicity of the nativity as we gather with our children and grandchildren and we think of our friends in distant parts. Those of us interested in the Shroud also reflect on the enormity of the crucifixion and our year's work in sindonology. And what a year 1989 has been. It seems to me that enthusiasm for Shroud study has increased in leaps and bounds since the October 1988 C14 announcement. The two major conferences at Bologna and Paris this year have served as a measure of this resurgence of discussion and research (and the polarisation of viewpoint) except that I begin to believe that far more people are now questioning the veracity of the carbon test than were initially. Indeed, almost as if the C14 had never happened, scholars and scientists alike are talking of the Resurrection far more candidly than they ever did and new lines of enquiry are constantly opening up.

Also this year I had the opportunity to pursue more research into my historical enquiry into the Templecombe panel painting which I hope to publish in 1990. Another signal event for Shroud scholars in Australia was the visit to Australia by

EDITORIAL (cont'd)

Professor Luigi Gonella, scientific advisor to the Custodian of the Shroud who gave public lectures in Melbourne and Sydney as well as a number of media interviews thus keeping interest alive (and back into the press) in this country. I shall report on this visit in the next issue.

Other items in the next issue will include an important article by British sindonologist Fr Charles Foley and a comment on the statistics of the C14 test written by Belgian Remi Van Haelst.

I heard the unhappy news that the Israel archaeological site under the direction of Sister Damian of the Cross, Shroud researcher, was the subject of vandal attack in Israel earlier in the year by fanatic extremists, a matter which received almost no publicity. But more distressing is the news that on her return to the United States she suffered two strokes. She is on the way to recovery now and I am sure many readers of *Shroud News* would join me in wishing her a speedy recovery to full health.

Thus as the New Year approaches I look forward to continuing to bring my readers more news of events in the Shroud world and I believe the research and study will continue to increase despite such illogical challenges as the medieval dating. As was said time and time again at the Paris conference, one piece of unchecked (and apparently uncheckable) research, carried out in three labs without independent witnesses, and without the publication of their raw data, is pretty slim reason for discarding a century of scientific and scholarly knowledge and two thousand years of other evidence which, in the main, points to the authenticity of the Shroud and is even slimmer reason for fraudulently proclaiming as did Hall, Sox and others that it is a forgery.

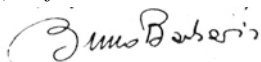
REX MORGAN

Turin, December 18, 1989

On the occasion of the thirtieth anniversary of the foundation of the International Centre of Sindonology, which coincides with the recommencement of the publication of the journal SINDON "New Series", the President, the Director and the Steering Committee of the Centre would like to wish their affiliated members and all friends of the Shroud, who belong to the various Centres and Groups all over the world, a very happy Christmas and a prosperous 1990, which we all hope will bring new and felicitous sindonological initiatives.

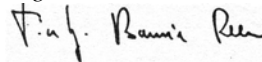
Il Presidente

(Prof. Bruno BARBERIS)



Il Direttore

Pierluigi BAIMA BOLLONE



THE PARIS SYMPOSIUM (cont'd)

The first part of this report on the PARIS INTERNATIONAL SCIENTIFIC SYMPOSIUM ON THE SHROUD OF TURIN, held on 7th and 8th September 1989, appeared in *Shroud News* No 55 and concluded with the address of Professor Gilbert Raes.

Next on the list was the address *Flax Cellulose: Characterisation and Ageing* presented by Dr Jeanette M. Cardamone, Textile Chemist of the Virginia Polytechnic Institute and State University, Blacksburg, Virginia, USA. After an ebullient opening, Dr Cardamone was stopped by the chairman in an appeal for a printed text to assist the perplexed interpreters who were quite unable to keep up with the speed of delivery and the technicality of the language. There was an immediate rush for the programme around the audience to read the synopsis of her text and when she came back on the air the lecture continued at such a speed that even seasoned native English-speakers had difficulty in following either the flow of words or what they meant. The entire presentation was very technical, very fast, very loud and with many highly specialised diagrams which meant little to anyone outside the speaker's own highly specialised field. The speech was littered with such terms as nodes, flax fibre bundles, morphology changes, heat congealing, nondestructive characterisation and analysis of ageing, ethylene conjugation, cleavage of energy, bond formation and a representative example of tautology was "It's best to keep the materials in the dark and in the absence of light." I think the whole thing was about methods of artificial ageing experiments with linen, a highly detailed and technical lecture on the nature of flax fibres and the future possibilities of usefulness in Shroud study, although the term Shroud appeared only once or twice in the twenty minutes.

I have sometimes been accused of being verbose but try and say this paragraph in 1 minute 39 seconds flat so that it means anything to an audience:

"In conclusion, a thorough characterisation of flax fibres by form, shape, processing reactivity to chemical environment and response to mechanical stress provides the basis for ageing research designed to document condition. Understanding the prevailing determinant forces which promote chemical modifications and the nature of these modifications will lead to designing experimental methods of analyses many scientists and scholars are carrying out in their studies by wet chemical analyses and instrumental methods. Now may be the time to correlate these results by establishing a computer archive. Such an archive would solicit the input of specialist and Shroud-related disciplines who have or would be willing to establish reference standards for all possible compounds related to particular Shroud areas. Non destructive infrared

THE PARIS SYMPOSIUM (cont'd)

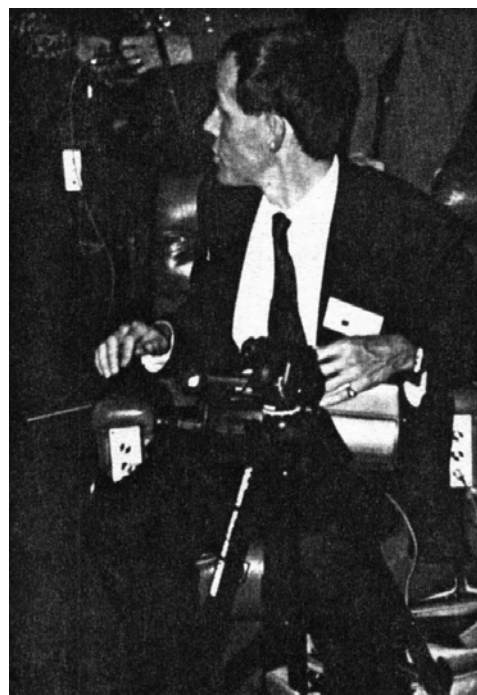
spectroscopy, bi-specular reflectance or bi-microscopy could be used to identify the Shroud's chemical composition and condition as well as the chemical composition of particulant substances. The spectral subtraction utility of available software can be used to distinguish the chemical identity of isolated colorants, additives and contaminants. Sophisticated software systems can de-combilant overlapping absorption bands and this feature, when used with an extensive catalogue of related compounds of a known composition, will help to solve the anomalies inherent in current studies which often lead to speculation rather than assurance in scientific reporting. This would take sponsorship and funding for many years of a sustained and collaborative study but the results would lead to timed results aimed directly to solving some of the mysteries of the Shroud of Turin." (Phew!)

After a welcome break Professor Giovanni Riggi di Numana showed an abbreviated version with background music of the 16-hour video filming of the sample taking procedures which caused a great amount of interest and by not having any commentary was immediately multi-lingual. In the early part of the showing a noisy altercation broke out between some of the audience and a television news crew who had set themselves up in an aisle obscuring the view. Riggi then gave a brief commentary on the work in which he described the two months setting up of the procedures in order to cut off a tiny piece of the Shroud. He said that a number of major problems was encountered and the team worked nonstop for 16 hours, eight on the sample-taking and another eight studying the Shroud with cameras and optical instruments to see if any evidence could be found of living organisms in the cloth which had been noted during earlier examinations. He confirmed that there were microbes present. They had also checked flora present as a guide to its state of pollution and noted that these had increased over the past ten years thus posing a problem of conservation. Riggi indicated that he was proposing conservation programmes to be worked out with STURP and the Turin group. They had also noted additional creases in the cloth and that steps would be taken to solve such problems.

The first speaker in the Carbon-dating section of the conference was Dr Jacques Evin, Director of the Lyon Radiocarbon Laboratory, whose paper was titled *The Viability of Dating the Shroud of Turin by Radiocarbon*. He noted that Wilson had already been applauded for not believing the carbon dating results and didn't expect to be so applauded for saying that he (Evin) firmly believes the results (and he wasn't). Evin pointed out that as a geologist and archaeologist his speciality is to assess dating procedures and subject them to critical analysis. He gave a



Fr Kim Dreisbach (USA)
and Fr Adam Otterbein (USA)



Prof John Jackson (USA)



Dr Jeannette Cardamone (USA)

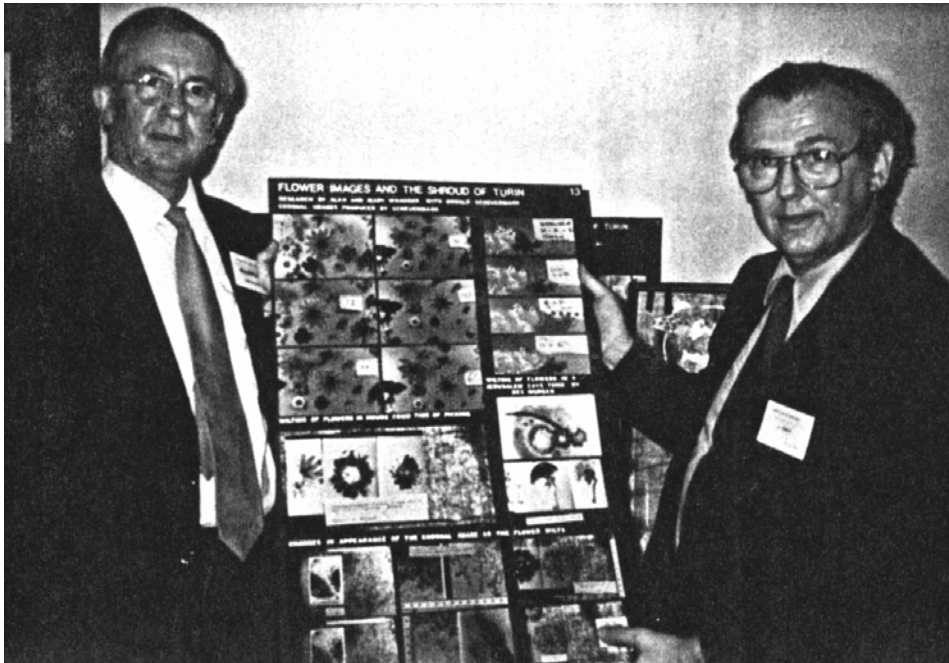


Dr Paul Maloney of ASSIST (USA)

THE PARIS SYMPOSIUM (cont'd)

general description of carbon and carbon dating and emphasised that all carbon remains constant in any substance and that all parts of the planet maintain a constant carbon content. He also pointed out that flax is one of the most perfect substances for carbon dating and that he had personally monitored the decreasing measure of surplus carbon in the atmosphere generated by the atomic bomb explosions. He said that many pollutants of the Shroud had been suggested as reasons for the medieval date but claimed that the problem of pollution was of no significance at all. It would take a pollution of 50% extra carbon to make a date of 2,000 years appear to be a date of 1,000 years and the cleaning methods of carbon dating make certain that no such error can occur. He gave examples from his own experience of confirming the accuracy of carbon dating of both methods and cited a recent example of laboratory intercomparisons on 30 samples amongst 15 laboratories using both methods which showed an absolute correlation of the laboratories and the methods. He was at pains to point out that the three laboratories had given great care to the Shroud testing on account of its importance. "I am not saying that other commentators are wrong in their criticisms, I am simply confining myself to the field in which I am an expert." He concluded by saying that the findings of 1988 were valuable and valid and that the accusations (by Wilson) were inexcusable and that we should be assessing the evidence properly.

Dr Michael Tite, Director of the Research Laboratory of the British Museum, like Gonella, had been generally regarded by many at the symposium as one of the villains of the piece and the attitude towards them had not been helped by the sceptically viewed absence of Professor Teddy Hall. Tite's paper *The Dating of the Shroud of Turin by Radiocarbon* was given lucidly and with an air of confident expertise. He showed slides of the sampling procedure in which he had acted as general co-ordinator and described in some detail the procedures involved particularly emphasising those parts which had been subject to severest criticism. The test had not been blind on account of the difficulties which would have been encountered in pre-cleaning had each sample been shredded and so the weave identified them to the laboratories. Commenting on the placing of samples in the sealed containers, which was not videoed, Tite reaffirmed that this had been done in the presence of both the Archbishop and Professor Gonella. He noted that Zurich and Oxford had, in fact, blind-tested the carbon gas after it had been extracted from the samples. He noted that when he received the results from each of the three laboratories there were no significant differences in the various precleaning treatments and that the results of the control samples were very close



Rex Morgan with Dr Alan Whanger and his display of Israeli flora, imprints of which he claims to have identified on the Shroud. This display shows photos of experiments carried out by Morgan in Israel for Whanger



Prof Luigi Gonella (Italy), Dr Michael Tite (UK), Prof Gabriel Vial (France)

THE PARIS SYMPOSIUM (contd')

amongst the three laboratories agreeing with their known dates. The total results of 12 sets of data showed that none was outside 2 standard deviations thus giving a date of 1260 - 1390 with a 95% degree of confidence.

The next speaker was Dr Jean-Baptiste Rinaudo, Head of the Nuclear Medicine Unit of the Montpellier Cancer Institute, whose paper was *The Shroud of Turin after Radiocarbon dating: A New Hypothesis*. He began by reminding us that the medieval dating solves no problems about the image and that the dating procedure is by no means perfect. He had been struck by the good results obtained for the control samples which implied unimpeachable work by the labs but pointed out that the Oxford results were distinctly different from the others which put them well beyond the threshold of allowing chance discrepancies which must thus have an inexplicable cause. Whilst authors have tried to assess the disparities, the publication of confidence levels are mere tricks to validate their results. The heart of the problem is to understand the 3D properties of the image and there is no doubt that a radiation process produced the oxidation of the surface fibrils to form it. Since there was a water-saturated atmosphere between the corpse and the linen some kind of alpha rays produced this radiation at high speed, a fact confirmed by the 3D image. Alpha rays imply a neutron flow produced by energy and therefore the Shroud was subjected to an energy flow which was different in different parts of the cloth. Thus the enrichment of carbon differs in various parts of the linen and is even affected by differing thickness in the cloth. The region between the frontal and dorsal head image would be the point of highest radiation which is where a C14 reading should be taken and would probably produce a dating even later, perhaps 18th century. He believed that alpha radiation would prove that the Shroud is not an object which can be used for carbon dating at all. "Science," he said, "can only acknowledge an incredible fact which does not tally with scientific knowledge. Other disciplines can then take over."

As this fascinating see-saw of opinion from scientists and scholars alike continued, each new speaker had something to add to the perplexity of the whole situation. Dr Marie-Claire Van Oosterwyck-Gastuche, Head of Dating at the Museum of Central Africa then presented her paper: *Radiocarbon: An Absolute method of dating?* She began by establishing her expertise in dating having studied thousands of isotopic dating samples including carbon 14 over a long period. She was more surprised by the conclusions drawn from the dating than by the results themselves. Does this mean that all other scientific findings should be laid aside and all the historical and iconographic data thrown out? Belief says Christ was placed in this shroud. Libby demonstrated the reliability of his method

THE PARIS SYMPOSIUM (cont'd)

with ancient Egyptian objects but there were wide variations according to the effects of other things on the object and as the number of C14 tests increased so the number of variations increased. She gave the history of carbon dating including the 1970 intercomparison chronologies which showed the curious phenomenon that from 1500 BC there is a systematic change in C14 dating which led to the calibration system.

She pointed out that C14 is especially inaccurate with linen samples a fact which has largely been ignored by C14 specialists. She cited many examples of testing which had been up to 1000 years out and said that in the archaeological world there is a "revolt brewing" against C14. An isolated C14 dating does not have much value in archaeology. There is an authenticity of historical record and a fragility of C14 dating. She gave numerous examples of datings which had been in error up to 1000 years on account of the effects of soils and water on objects even when within a few kilometers of each other. She described the microbe decomposition of cellulose which occurs in contact with humus acids which do not have radiocarbon content the same as other materials resulting in considerable distortion of ageing results. She showed that the range of results of the recent testing were very broad (Oxford 730 years, Zurich 676 and Arizona 646). Confidence level is an extremely narrow significance level. All this is revealed by the published statistical curve and the real age is very broad compared with the calibrated range. "One must regret," she said, "the systematic ignorance of the C14 experts in the history of the Shroud. It has not been hermetically sealed and therefore presented in the same condition as some artifacts which have been carbon dated."

She claimed that its exposure to fires, dowsing, folding, high temperatures, attempts at washing etc would have affected the carbon content, especially at the site of the sample which was a moisture stained point where carbon migration would probably have taken place. This is why the labs show a disparate result and the inconsistency of the result with history. "It is dishonest to say that science has spoken." She noted Dr Evin laughing at her at this point and commented wryly that in all her examples of false dates she had not taken any from Evin's own work. "There is a mountain of facts demonstrating the inaccuracy of C 14 dating and there is another mountain of facts demonstrating the authenticity of the Shroud."

Dr Robert Dinagar, Adjunct Professor of Chemistry at the University of New Mexico, and a member of STURP, then took the floor to present *Isotope Measurements and Provenance Studies of the Turin Shroud*. His paper amounted

THE PARIS SYMPOSIUM (cont'd)

to a fairly spirited defence of STURP as being the only competent authority in the Shroud field and the view that none of all the controversy would have occurred if everyone had gone along with STURP's proposals and views in their entirety. He gave a step by step resume of the work of STURP and its part in setting up the C14 discussions. The nomination of six labs, their own intercomparison experiments and their report at the Trondheim conference. "At Trondheim", he said, "I remember it well: it was six o'clock in the afternoon after a long day." Many of his audience sighed in sympathy as we were in exactly the same circumstances. Dinegar claimed that there was an attempt by the Pontifical Academy of Sciences to co-ordinate the C14 dating which led to tension in the C14 community "which exists to this very minute". He recalled the now familiar C14 meetings and the changes to the originally agreed procedures and the instruction "from Rome" that Harwell, Brookhaven and Rochester were to be eliminated. Criticisms have been levelled at the dates, the procedures, the sample-cleaning, the interlab communication, the sample contamination. Dinegar disagreed with them all except the contamination but said that one must assume that the sample is typical of the contamination on the whole cloth and there is no evidence of enough contamination to change the date. All involved, he said, should be congratulated rather than criticised and then said "Perhaps we are wrong; perhaps the Shroud dates from an earlier time", and then made the apparently contradictory statement, "I should be a biased scientific investigator if I were to say that the Shroud of Turin is anything but a medieval cloth." This perplexity was conveyed to the audience who received his remarks with stony silence for some minutes before a polite smattering of mild applause.

Dr Larry Schwalbe, Professor of Physics at Los Alamos National Laboratory, then spoke of proposals for further isotopic measurements of the Shroud. He talked of the known differences in isotopic concentrations between, say, Israel and Europe and said that observation of a sample of 100mg would allow us to discover by this means the geographical origin of the cloth.

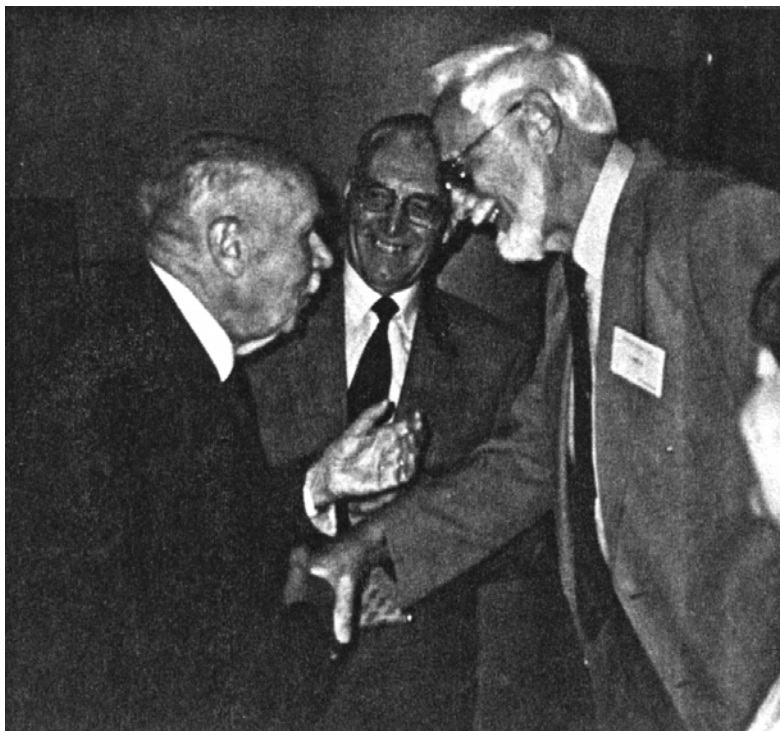
Following this hard day's work there was a session of questions answered by various of the speakers. Amongst the most significant of these, Evin answered some of Van Oosterwyck's challenges by discarding her examples as irrelevant. He also challenged the influence of water on objects except for plants grown- in water. He challenged Rinaudo's alpha-ray emission hypothesis and said that even if there had been a resurrection insufficient light would have remained in the cloth to affect the C14 content. We cannot, he said investigate extra-physical matters; scientists cannot respond to such questions. There followed a fascinating



Profs Nello Balossino
and Giovanni Tamburelli (Italy)



Mrs Dorothy Crispino (Editor of *Shroud Spectrum*), Prof Larry Schwalbe and Prof John Jackson



Dr Antoine Legrand (Fr) greets Dr Robert Bucklin (USA)

THE PARIS SYMPOSIUM (cont'd)

altercation between Evin and an audience member and this was followed by a set-to between Van Haelst and Tite and then a further spat between Evin and a delegate re the sample cleaning. Tite claimed that all the laboratory information was not published because of the restrictions imposed by the journal *Nature* and explained why and how he had produced the third control sample. In response to a question about why he "had allowed" the labs to leak results he said simply "How could I have stopped them?" And how, he asked, is it more difficult to produce the image in the middle ages than 2000 years ago? In response to the direct charge that he had changed the samples he said that this was ludicrous because the labs could identify the Shroud sample from the weave anyway. He also sidestepped the issue of whether the results were selective by saying that he could only publish the results he was sent and it was not his job to publish other people's results.

By this time there were numerous people moving onto the stage either to ask or answer questions and in the melee Wilson spoke about stigmatists and attempts to reproduce the image and used the opportunity to state again his view that until someone can explain how a medieval artist could produce the image with no point of reference or photographic technique to test his work he cannot accept or understand the medieval date, a view which invoked sympathetic applause once more.

Riggi gave further information about the samples and even answered the criticism of not using gloves on the basis of the general past contamination of the cloth. Gonella reiterated that the cutting did not run into the side-seam but into a crease in the cloth. He reminded the audience that Turin's only concern was the safety of the cloth and said that "We do not accept the interpretation that the medieval date means that the Shroud is a fake. It doesn't mean that at all." He also assured Prof Raes that his sample was safely in the Shroud Chapel in the original envelope in which it had been returned to Turin from Belgium. Thus ended the productive, fascinating and animated eleven-hour marathon of day one.

An informal dinner was held for delegates that evening at which much discussion continued and my own seat near Van Haelst, Lindner and the Lavoies proved an interesting exchange whilst the genial Kevin Moran televised everyone's every mouthful.

The second day of the symposium had been re-scheduled by announcement at the close of Day One to start at 0830 but those who had not been at the dying minutes the day before were unaware of this development. The chairman valiantly tried to get the show going by calling on the first three speakers who obviously were not

THE PARIS SYMPOSIUM (cont'd)

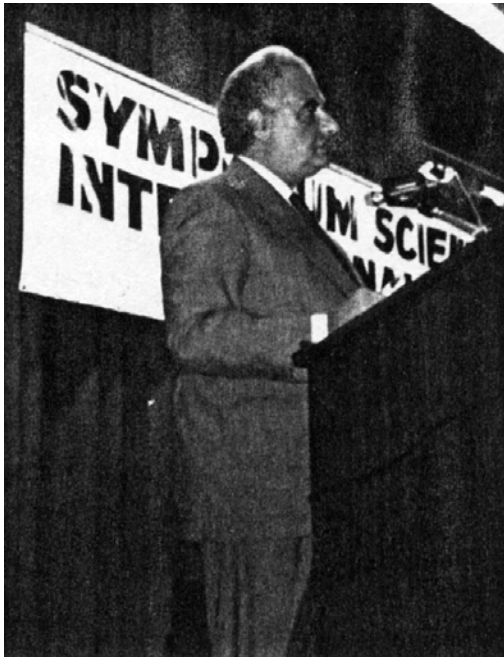
yet there as they had been scheduled for 0900 and 1015 and the absence of a speakers' committee to check that speakers are at a conference and that all their requirements have been met meant that a good deal of ad hocery went on that morning. To cheers from the now filling auditorium it was discovered that the scheduled fourth speaker, Baima Bollone, was present and so he went on first. He began his lecture only to be interrupted by the chairman to be told that the slides he was describing had not been set up on account of his early appearance on stage. Bollone retorted that he had given in the slides early that day. The altercation was finally settled and Bollone switched from French to Italian to ad lib for several minutes whilst the slides were being found and set up, often upside-down and nearly all out of focus. Professor Baima Bollone's paper *Proofs of the Presence of Human Blood* proved to be most interesting and was specifically a description of his work on bloodstained samples from the Shroud and various control samples. He revealed that he had gained access to samples taken some centuries ago and others in private possession (!). His series of experiments had noted that all the samples have the same features. The most interesting is that from the right foot. He noted that there are blood particles on every thread of the Shroud as if migration had taken place. "I shall only show you 46 slides today". He remarked that even early samples retained their characteristics but that all studies had been hampered by the presence of dust on them. He indicated that the red blood cells observed on the Shroud are typical of those not specifically conserved and showed many slides of them under various filtering and lighting conditions which indicated vegetable matter particles. He had also done crystal analysis of the blood which positively identifies it. Fluorescence tests indicated the presence of antibodies and traces of haemoglobin. He concluded that matter taken from the Shroud behaves in the same manner as bloodstains from ancient samples and that experiments done with samples containing aloes, myrrh and serum give the same results as the Shroud. "I do not claim I have been able to determine the blood group but we have reached the conclusion that compared with a number of samples, ancient and contemporary, the Shroud stains behave as if they were AB positive"

Dr Jacques-Louis de Beaulieu, Director of Research at the Marseilles Historical Botanic and Palynological Laboratory, then presented his *Critique of the Work of Dr Max Frei-Sulzer*. He prefaced what was obviously not going to be a sympathetic critique by reminding us that we must not get carried away with our enthusiasms and that scientific analysis must be unimpeachable. He stated that he was critical of the study of the pollens and reassured us that he has been doing

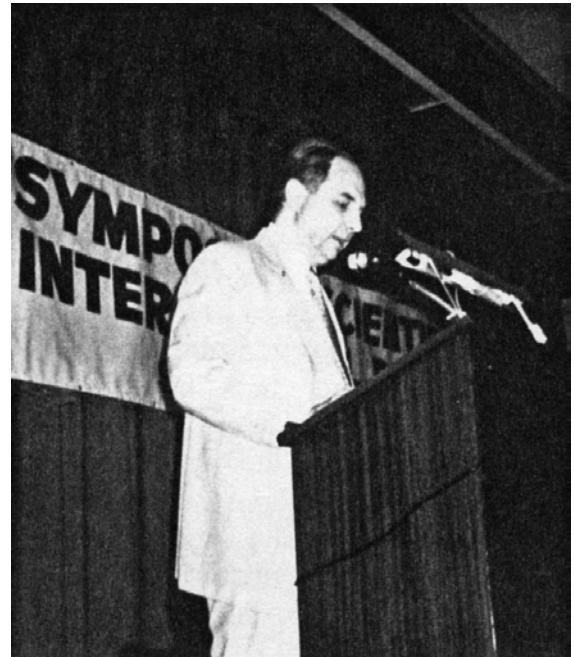
THE PARIS SYMPOSIUM (cont'd)

pollen analysis for 25 years in the Mediterranean area. Frei had published only articles and no scientific paper and that the work of Dr Bulst was based only on these articles. He showed that one of his own expert team had produced a different table of results from that of Frei and that the distribution of pollens near Jerusalem according to Frei was in reality considerably less. Bulst had not fully assessed the differences between pollens of the same genus which come from different locations. It is, he said, impossible to reach the degree of accuracy claimed by Frei. Some of his conclusions are more specific than can be determined. He had built up his own reference collection which was too small for proper comparison and his isolation from the palynology community led to inaccurate conclusions. Indeed only 13 out of Frei's 58 published samples have probable Middle Eastern origin. And how, asked de Beaulieu, were the pollen grains preserved for so long without damage. He concluded that additional information was required.

As if in answer to this plea, Dr Paul Maloney, Archaeological Researcher and Director-General of ASSIST then revealed to the world that his organisation had acquired the entire contents of Frei's laboratory. He said that early in 1986 Mrs Frei had allowed them to have five samples from the Frei collection for study and then in 1987 "decided to make the entire collection available" to ASSIST. In June 1988 when the booty was safely in the United States Drs Adler and McCrone had been engaged to examine the collection and attested that the samples were from the Shroud. ASSIST now has all the material related to the Shroud, Frei's pollen samples, photoslides, etc and including pollen samples from the cloth of Oviedo, particulant samples from the "Crown of Thorns" and, indeed, from the Tunic of Argenteuil as well as all his unpublished manuscripts and notes and 19 further Shroud pollen samples not yet published. Maloney pointed out that from preliminary analysis of the collection something was learned about Frei's philosophy and methodology. Dr Aaron Horowitz had agreed that the pollen displacement spectrum was that of Israel and not North Africa. He wanted to investigate the known as well as the unknown and even made pollen collections along the River Doubs. Maloney then talked of the presence of flowers on the cloth and noted that Dr Alan Whanger believes he has identified 28 floral imprints on the cloth. We need to know the exact distribution of pollen on the whole cloth and now the evidence is available. ASSIST is preparing a complete inventory which will be available to all specialists (such as de Beaulieu) and Maloney invited all interested parties to submit proposals as to the use of the newly acquired resource of the Frei Collection.



Prof Pierluigi Baima Bollone (Italy)



Dr Gilbert Lavoie (USA)



Dr Mary Whanger (USA),
Fr Charles Foley (UK), Dr Alan Whanger



Prof Gilbert Raes (Belgium)

THE PARIS SYMPOSIUM (cont'd)

Dr Gilbert Lavoie, American Doctor of Medicine and long-time Shroud researcher had, by now, properly arrived and so presented his paper *The Making of the Bloodmarks and the Creation of the Image are Two Separate Events*. He noted his French descent and that it was good to be back in France. He outlined the historical record of the crucifixion and the Jewish law as it related to body washing and concluded that the bloodmarks on the Shroud concur with both of these. He described his many experiments which show that clotted blood is, in fact, transmitted to cloth as "mirror images", as Barbet had suggested, but that this has to occur within one to one and a half hours, the cloths must be vertical and must be moist and undisturbed. All three medical criteria are met by the death of Christ. First the death position was vertical, second the burial took place within the required time and only Jews would have taken care not to disturb the "life-blood". The blood stains on the back image consist of blood and pleural fluid and are consistent with the body having been placed horizontally. The blood flow on the left elbow is uninterrupted and forms a clot trailing off the image as it was a prior bloodflow. He pointed out that no artist would have a reason for doing this. The bloodflows demonstrate that the victim died in a vertical position, that the cloth was draped over a body and the image could not have been created by any mechanism based on a contact process. There is no image where bloodflows exist. Lavoie then showed the results of experiments by painting blood on a cloth in the exact spots as indicated by the Shroud which supported the same three conclusions as before together with the spatial relationship showing that the bloodmarks are the result of two different events and all are consistent with the crucifixion as described of Christ. He then gave detailed demonstration of the effects of shadows on the human body when a light source is in different positions and the body is either supine or erect. There are no shadows if the body is supine and the Shroud image corresponds to a light source being above the standing body rather than supine. He demonstrated numerous details of shadowing points of the body and comparing them to those on the Shroud image coming to the conclusion that the light source was above the body.

There are other corroborating factors for this hypothesis such as the effect of the hair position for an upright body and the roundness of muscles rather than flat if a body is in a supine position. He noted that from numerous autopsy observations the buttock muscles, for example, are flattened in the supine position. He went on to say that if the Shroud image is a negative then the hair of the man must be blond or white as its colour is the same as the other image characteristics. Also, because of the position of the feet the figure is obviously not standing so it must therefore

THE PARIS SYMPOSIUM (cont'd)

have been suspended or raised or lifted. So if the image was of a white-haired man suspended in the upright position is there any biblical reference to help us. He suggested that John 8: 28 gave us the clue "When ye have lifted up the son of man..." so this image is consistent with descriptions of the Resurrection. And so Lavoie concluded that the Shroud indicates from its blood and images three things: Firstly the vertical position of crucifixion, secondly the horizontal position of burial and thirdly the vertical position of lifting. He concluded by saying that what this all means is the choice of the listener.

The listeners very quickly inferred what he meant and he left the stage to exceptional applause.

After a short session devoted to questions of various speakers the symposium heard one of the most extraordinary and significant papers to be given.

Dr John Jackson needed no introduction to a Shroud audience but his present post is Professor of Physics at the University of Colorado and he has virtually led the Shroud scientific research since the 1970s. His paper was entitled *A Novel Mechanism of Image Formation on the Shroud which is consistent with all Observational Characteristics of the Image*. Having noted that there are no side body images on the cloth, that the image consists of cellulose degradation which is a molecular change in the fibres, that the colour structure of the body image is the same as that of the burnmarks, almost as if they had occurred at the same time, and that the image pattern itself is not anatomically perfect since there are some deformations such as the length of the forearm and the width of the hips, he pointed out that if one compares the levels of intensity of the frontal and dorsal images they are virtually the same and yet the weight of the body contact with each must be different.

Jackson discussed several hypotheses of image formation and in each example demonstrated that they could not be valid by showing image analyser reproductions of each possibility. By showing slides of the results of his controlled experiments he disposed of the possibility of an artist's drawing; of molecular diffusion; of natural radiation from the body and of direct contact. All of these produce distortion. He then set out his new hypothesis.

Firstly he showed that the image involved a cloth-covered body and proved it by a number of observations. The intensity structure of the image correlates for the whole surface of the Shroud through mathematical intensity-distance calculations. The dorsal and frontal bloodstains correlate where they meet on a cloth draped over a body. The blood structure indicates the presence of serum and a vertical position of the body and forensic interpretations of all blood flows together with

THE PARIS SYMPOSIUM (contd)

the microchemical work on them shows that the blood is real. Thus the image was made by a cloth being on a human body at the time.

Secondly, the direction of any point on the image in relation to the body or the cloth all map vertically rather than perpendicular to the body or the cloth. This had been tested by the construction of three-dimensional statues of each possibility and only vertical mapping produces a reasonable body image. Thus the only principle of physics which could be invoked to explain this is gravity which would have played a significant role. Jackson then spoke of Lavoie's work and that he had at first thought it to be quite bizarre considering the blood and body separately. How, then, asked Jackson do you get blood images in the hair when the body image shows the sides of the face? It is as if the cloth were in two separate positions when the blood and body images were formed: draped for the blood and slightly flattened for the image. His inference of gravity and the two positions suggested by Lavoie correlated. "To me," said Jackson, "It is almost as if you have a cloth over a body and for some reason that cloth physically collapsed down into that body region which accounts for the misregistration of body and blood images, that is, if the cloth falls into the body region you would not see any side images" (Audible breath-drawing by the audience). Further evidence for this idea is the lack of image between the two head images. "It is not enough to say that the cloth collapses mysteriously into the body space, you have to postulate some kind of stimulus to create the body image because we know the image exists."

Next bombshell (but delivered with kid gloves): "It looks to me that at the microscopic level of photography the shadows imply radiation. But if you postulate that a radiation process caused the image then the attenuation rate of that radiation would be very small because of the high resolution of the features on the image. The only radiation wavelengths which fit that parameter are ultraviolet and X ray and the photons associated with those wavelengths are energetic enough to cause photochemistry to occur in the cellulose. Cellulose exposed to ultraviolet causes the change and then over time the marks would yellow.

This theory also explains the three-dimensionality because different areas of the cloth would arrive in the space at different times thus causing the difference in intensity of the image having received a lesser dose of radiation. So what happens to the dorsal image? Since the dorsal part of the image stays put in this process of collapse the characteristics of the image ought to be those of a contact image without the 3D characteristics. The dorsal image appears to have intensity in parts but not others and yet the scourge marks appear throughout which suggests that the dorsal image is, in fact, a contact image.



Prof Giovanni Riggi di Numana (Italy)



Prof Emanuela Marinelli (Italy)
and Fr Kim Dreisbach (USA)



Dr Arnaud Upinsky (France)



M. Claude de Cointet (France)

THE PARIS SYMPOSIUM (cont'd)

If the cloth fell into a body region why is the image only on the surface of the cloth? The answer is that the absorption coefficients for the radiation in the cloth are such that fibrils inside the cloth are shielded whereas the fibrils on the surface are not. Thus you have a superficial image. So on the frontal part you ought to see a superficial image on both sides of the cloth whereas on the dorsal side we ought to see an image only on the one side. This is a matter which should be tested in the future.

In conclusion Jackson said that his hypothesis was unconventional but logical. Typical of the Jackson approach, he had presented an argument very tentatively, although thoroughly backed with scientific evidence, and in his masterly manner of understatement and without actually saying so in so many words had virtually proposed that there is ample scientific evidence to suggest that the body over which the cloth was draped suddenly disappeared with an ultra violet radiation emission of very short duration and that the characteristics of the image are consistent with its having been falling into the void at the time of its formation on the surface of the cloth after the bloodmarks had been transferred by contact. This was tantamount to Jackson saying that it was all caused by the Resurrection of Christ, which Lavoie had already said half an hour before. It was interesting that two eminent scientists, arguing from scientific observation, no matter what the sceptics might think about their motives, had both come full circle in the Shroud argument. Jackson's delivery was also greeted by tremendous applause because by now the Shroud world gathered in Paris had become re-convinced that, despite the carbon dating exercise, the overwhelming evidence favours authenticity rather than fraudulence.

During the lunch-break I managed the only private meal of the conference and this was with Fr Adam Otterbein at a nearby cafe during which we updated each other on world Shroud matters. He is very keen to establish a truly international group to take the studies further. We discussed the fact that Wilson had invited a dozen or so selected people to a meeting on the Saturday for the same purpose. I chatted with Tite, Raes, Foley and others during this break and also spotted Fr Dubarle who had dropped in for the afternoon and we exchanged warm remembrances of earlier meetings.

During the lunchbreak Riggi's video of the sample-taking had been shown again in a slightly longer version and the afternoon session began with a paper by Mario Moroni, Industrial Electronics expert from Italy, entitled: *Hypothesis of the slight "accidental" burning of the Shroud Image: Experimental Verification*. He showed the results of numerous tests done on the effects of water and heat on both image

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and blood to substantiate his claim that an imprint was transferred to the Shroud firstly by the body and that it was later "developed" by a heat process, namely during the 1532 fire. He concluded that the image could not have been produced by artificial means and particularly by a heated statue.

The well-known Shroud researcher and Doctor of Medicine, Dr Sebastiano Rodante of Syracuse was unable to be present and so his paper was read by Professor Emanuela Marinelli entitled: *The Natural Formation of the Imprints on the Shroud by Blood, Aloes and Myrrh*. He noted that he had spent 48 years studying the genesis of the image on the cloth and that in his numerous experiments had recreated the burial circumstances in catacombs in Syracuse (Sicily), which are of similar latitude to those in Jerusalem. The tests used solutions of aloes, myrrh and blood sweat but when oil-based did not produce clear imprints. With water-based solutions this occurred and the intensity of the images was proportional to their duration in tomb conditions. The images have 3D characteristics. Rodante then commented on the C14 results in relation to his field of work and stated that as a scientist he must compare these results with the evidence of the imprints and noted that it would have been extremely difficult for a medieval painter to produce a cloth using clotted blood, the existence of which was not discovered until 1593, not to mention all the other medical aspects of knowledge which are embodied in the Shroud evidence. The Shroud might have, therefore, been a sheet woven in the middle ages and then used to bury a crucified man with all the prerequisite knowledge of anatomy and medicine but even if they could all be reproduced the greatest difficulty was to have a crucified man exhibiting the very rare medical condition of bloodsweat. He had calculated that the probability of this occurring mathematically in the Middle Ages was 1 in 960 billion. He then made the further point that deaths of this nature normally produce accelerated putrefaction causing ammonia around the mouth but there is no such evidence on the Shroud image, all of which, he said, points to the image on the Shroud being that of Jesus Christ, whose body did not putrefy, and no-one else.

Professor Giovanni Tamburelli, Director of the CSELT laboratory, and Professor of Electronic Communications at the University of Turin then presented, with his assistant, Professor Nello Balossino the paper: *A New Computerised Three Dimensional Face of the Holy Shroud and New Computerised Comparisons with Traditional Icons*. Tamburelli's work is well-known but he began by pointing out that his 3D enhancements revealed many details not visible on the Shroud image to the naked eye. For example the following details simply could not have been produced by a forger: the two holes in the side of the nose which correlate

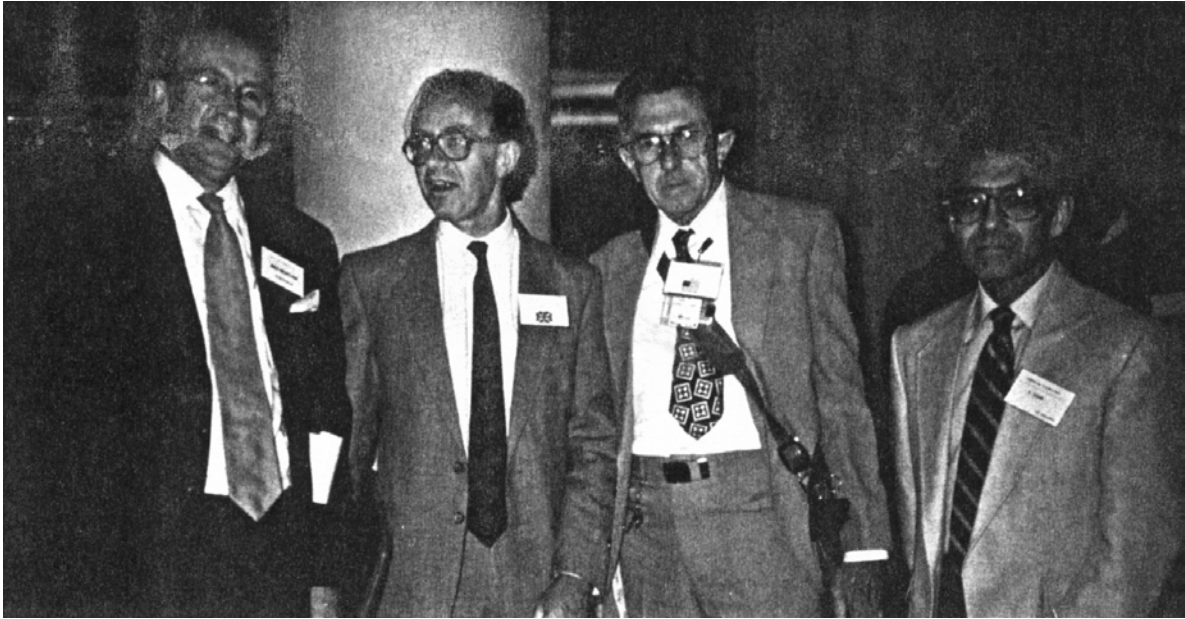
THE PARIS SYMPOSIUM (cont'd)

exactly with the plumbatae of a Roman flagrum; the cut on the cheek which corresponds with that made by a cut stick; the drop of blood trickling from the right nostril which stopped trickling at death which must therefore have occurred on the cross; the imprint of the coin on the right eye.

He went on to demonstrate new work in which the high definition of the computerised images enables us to see what the face must have actually looked like. He established links between the computerised icon and extant traditional icons. His new work showed that comparisons between the 3D image, bruised as it appears on the Shroud, and the electronically "cleaned" image without the injuries produce different results when superimposed on traditional likenesses of Christ. Whilst the comparison of contours all show common features and all tally very closely thus indicating the probable authenticity of the Shroud, it is the superimposition with the "cleaned" face which gives the best, almost exact, comparison and clearly no forger could have made such comparisons between any icon he might have copied and his production of the Shroud face without the facility to reproduce the computerised techniques used by Tamburelli's team. Thus, he concluded, the face on the Shroud must be that of Christ.

The symposium was then treated to what was probably the most significant and comprehensive paper of the whole week which was regrettably limited to little more than an hour and the speaker had therefore to curtail much of his interesting detail. I should point out that my own précis of it is totally inadequate and I am currently attempting to acquire the complete text for later discussion. Arnaud A. Upinsky, mathematician, epistemologist and President of the Euclidian Foundation presented his findings on *An Epistemological Synthesis of the Shroud of Turin*. Upinsky began by indicating that he had no special interest in the subject of the Shroud and indeed, had never addressed it until asked very recently to prepare this paper. Having defined epistemology as the science of identity in which the study of scientific method itself is carried out in a logical and mathematical way he said that since we have no details of the mechanism for image formation we cannot therefore conclude that it is a fake and surely after ninety years of research, science can distinguish between the value of that research and one Carbon 14 test result.

Epistemology sets out to distinguish the truth and the meaning of scientific results. There is exceptional credibility for the Shroud and there is no signature of any forger and the rational conclusion is that the Shroud is authentic. But if it is authentic it is contrary to reason. How can you ask a rational person to prove the irrational in a rational way? No proposal other than that the Shroud is the burial



Rex Morgan (Australia), Dr Michael Tite (UK), Dr Bob Dinegar (USA),
Prof Daniel Scavone (USA)



Remi Van Haelst (Belgium), Fr Charles Foley (UK)

THE PARIS SYMPOSIUM (cont'd)

sheet of Christ has ever been rationally put. After a century of scientific investigation could this be a mirage of science? Usually when one scientific result is aberrant science discards it. Science is interdisciplinary by definition so one result from one field cannot be valid on its own. If all scientific evidence up to 1988 is wrong (as suggested by the carbon labs) then clearly no scientific evidence is credible. It is not the credibility of the Shroud at stake but the credibility of science.

If all scientific knowledge prior to 1988 is wrong then the Shroud should be false therefore what is wrong is the carbon dating. And in that case the intrinsic accuracy of the scientific method has to be questioned which is absurd. Upinsky then took the audience through 30 tables of facts he had constructed (all too quickly as the chairman pestered him continually to go faster) and which were drawn from all the available evidence in order to see the divergences and convergences of that evidence. He was technically unable to see other than one consistent system with the only divergence being the C14 dating. He went into detailed discussion of the fact that all the hypotheses turn upon whether the Shroud was a forgery. If so it was due to an artist or a forger. Either the image is manual or it is non-manual yet there is no capability for a medieval man to produce it and science still does not know how it was produced. He then took numerous examples of scientific fact about the Shroud all of which point to a signature of authenticity and all of which exclude manual production. Science has thus shown that it cannot be the work of an artist or forger. If it were, then the forger is unknown, used precise details like clotted blood and the forger's identikit shows that he was modest, discreet and had no personal interest at stake which is not really logical. There is much evidence of the Shroud's existence historically prior to the 14th century, its weaving technique is consistent with the 1st century, all its historically known dates converge except the C14 date. The forger would have had to go to extremes of technique and knowledge to convince people so he prefers truth to attractiveness and is an absolute genius. All the elements for authenticity fit in with one another. Upinsky noted as an aside that experts are happy to accept pollens, for example, on other objects but they are suddenly the wrong ones when applied to the Shroud. The crucial element in the argument is that it cannot be falsified. There are numerous facts to show that the man had been crucified and history corroborates the suffering of Christ with all the signs on the Shroud.

Either the C14 test is correct or it is not. If it is correct then everything else is wrong. But how did the C14 test not give the proper date? Much depends on the

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level of knowledge at any given point in history. A four-page article in *Nature* is very little to cancel the other evidence science has provided to date and the very least the experts could have done was to publish the raw data. The rules of scientific validity which have not been observed make the C14 dating uncheckable so you are out of the realm of science by definition. There was a biased introduction to the *Nature* article and then a conclusion without any critical discussion. If the Shroud image cannot be falsified then the C14 result must be false. There is geometrically and algebraically logical consistency in all the epistemological patterns whereby science has shown that the Shroud was not done by an artist, was not a forgery, had been occupied by a crucified man and history has established that the crucified man was Jesus. There cannot be a double standard in science and all the work done so far should be published in a co-ordinated way.

At this point in the lecture, which was receiving the rapt attention of the audience, some idiot started slow-clapping the speaker in order to disrupt the proceedings. After a few moments of this puerility, bouncers moved in and the interruption stopped after near riot scenes which again reminded me of the Academy in 1902. Upinsky concluded by pointing out that scientists who deny the authenticity in fact have holes in their hands. And his final definition of authenticity: He who acts on his own authority is in probability the primordial cause of the scientific history of the Shroud.

Upinsky's presentation was greeted with thunderous applause since the more than 300 delegates were fast coming to the conclusion that their earlier mystification by the C14 result of 1988 and their politeness to scientists who believed that result was now giving way to sheer disdain for such an illogical way for scientists to have behaved, clearly underlined and pinpointed by Upinsky.

The next presentation was a very short exhortation by Professor Olivier Pourrat concerning the absolute necessity of a rigorous methodology for the scientific study of the Shroud. Then Professor Eberhard Lindner of Germany spoke on *The Ambiguity of the Radiocarbon Results* in which he outlined his theory that on the assumption of the Resurrection which appears to be an historical fact there would have been a selective process of disappearance of protons leaving electrons which caused the image by radiation and the remaining neutrons caused an isotopic shift to C14 thus affecting the dating result. He claimed that if the samples had been taken from other sites different dating would have resulted. He claimed that all the arguments put forward by Hedges of Oxford can be refuted and that science is obliged to find results which are incontestable. He concluded by

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saying that perhaps the C14 results are a hidden proof for Resurrection.

Then Professor Larry Schwalbe, member of STURP, was given the floor in place of Dr Alan Adler who could not be present. Schwalbe outlined his hopes for the future study of the Shroud which would include the establishment of procedures for conservation, the determination of the cause of the image, the cultural circumstances of the Shroud's origins and a fuller understanding of the nature of the cloth. He also suggested attention to such questions as testing all the image hypotheses, studying the physical distribution of colour on the fibres over the whole cloth, further studies in blood chemistry, examine whether there could have been a modification of the isotopes by some circumstance and further pollen studies. "I may be overly idealistic", he said, "But the scientific community has to regain a certain amount of credibility that it has lost." And finally the Church should adopt a policy transcending any one individual re access to the Shroud for study.

President of the Holy Shroud Guild, Fr Adam J Otterbein, then spoke to *The Necessity and Possibility of New Studies*. He reminded us of the progress of knowledge on the Shroud in America and that he, as Wuenschel's successor, established the Holy Shroud Guild in 1951 and had been closely associated with all American and other Shroud study ever since. He called for a re-evaluation of the C14 work and pointed out that science has found no serious evidence against authenticity but much for it. Many interested, qualified people have studied the Shroud for many years and are willing to assist any further investigation. Further studies would have the support of the Pope, he said. He proposed a further C14 test which should not exclude any organisation or individual from submitting critiques of the recent test. He called for an international commission of experts to be established to evaluate all future proposals which would designate qualified experts to carry out the tests with commission members as witnesses throughout.

Professor Luigi Gonella then made a further statement. As scientific advisor responsible for the Shroud he reminded everyone that the Shroud was not an object in the public domain, it is privately owned by the Vatican and its custodian is the Archbishop of Turin. There is, he said, a tendency amongst certain people in the Shroud community to circumvent the chain of responsibility. Recent experience had been disturbing. Ballestrero once said that there was no importance in the relationship between science and the faith because the Shroud is not an article of faith but research is very important for the relationship between the clergy and the scientific community. We have been astonished, Gonella said, at the behaviour of some scientists and you may be sure, he warned, that any



Prof Gino Zaninotto (Italy) discusses his research with a French colleague



Dr Gilbert Lavoie (USA), Dr Bonnie Lavoie and son

THE PARIS SYMPOSIUM (cont'd)

future access to the Shroud will be attended by legal advice to ensure the respect of our rights. He hoped things of the past would not be repeated and the main priority will be the conservation of the Shroud which is linked with the issue of image formation. There must be a balance between the risk to the object and the value of the information gained.

We are worried, he went on, about the cavalier attitude of scientists who already have samples and I propose to recommend to the Archbishop that strict measures be taken in future. Some who have done experiments have not even told the owner of their results properly. He hoped that future testing would be done without an eye for publicity and sensationalism. None of the Shroud societies lifted a finger to help work out a way of reducing the amount of sample to be used and he also commented on the fact that many people during the conference had used the word "proved" when they were talking about a wild hypothesis. "I know," he said, "that talking about the Shroud takes a lot of self-control but it had better be exercised in the future."

Then followed a session of questions during which there were some lively exchanges involving Jackson, Evin, Tite and others. At one point the normally retiring Dr Alan Whanger asked from the floor whether he could show slides which indicate a defect in the C14 sample. Amid applause and confusion and attempts by the Chair to fob off the matter altogether: "Put it in writing." (Whanger: I have already put in writing twice and it has been ignored). The discourse on whether to proceed took up more time than the ultimate issue as raised voices between De Carbon and others almost drowned out Whanger's repeated "I only need thirty seconds to show you what was wrong with the samples". Finally he showed two slides and claimed that the sample included threads from the seam (which is 16/17 century) and had been rewoven into the Shroud itself. Riggi was called upon to reply and ultimately drew on a board to show what the samples had consisted of. The slides had been taken from Riggi's videotape and could not, therefore, be disputed. Riggi's diagrams were unsatisfactory to Whanger. Others now invaded the stage as the issue was obviously a very sensitive one. Gonella said that he was very shocked by the intervention and the question could have been asked of Vial yesterday. Gonella said that their work had been put under discussion on the basis of "a couple of video frames" but Whanger rejoined that he would be happy to show them all. Vial then said that he was a witness to the weighing of the samples and all threads had been removed. Still Whanger insisted that Vial would not have recognised the threads as they had been rewoven into the cloth. The fracas was somehow



Prof Mario Moroni (Italy), Mrs Barberis, Prof Gino Zaninotto (Italy),
Dr Bruno Barberis (President of Turin Centro), Mrs Dorothy Crispino (USA)

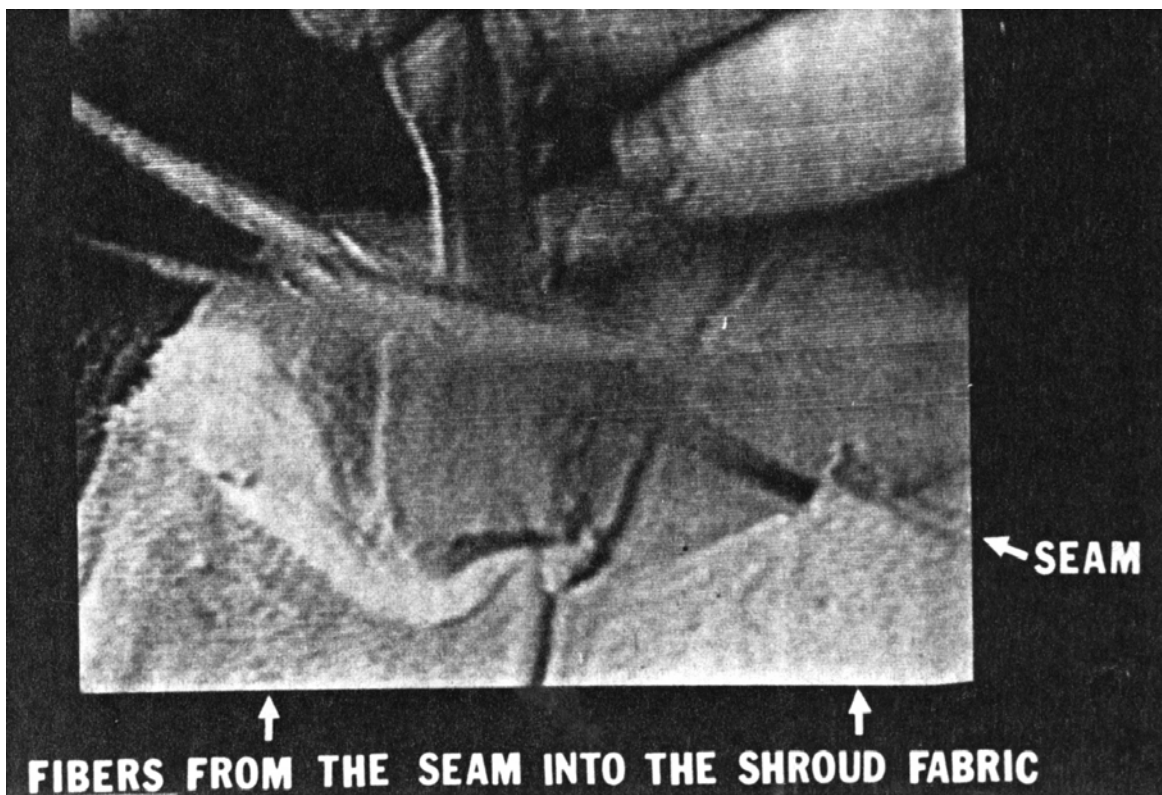


Ian Wilson (UK), Claire White (USA), Rex Morgan, Russ Breault (USA),
Paul Maloney (USA)

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disbanded and a few more questions of a less controversial nature were asked and answered.

The conference was brought to a conclusion by the very sensible, sanguine, perceptive and philosophical Professor Jerome Lejeune, Member of the Academy of Sciences and of the Pontifical Academy. After all the heat and excitement of the afternoon and the exceptional nature of the whole conference he concluded that we were in a "state of contradiction" which summed it all up very neatly.



FIBERS FROM THE SEAM INTO THE SHROUD FABRIC

A print made by Dr Alan Whanger from a frame of the C14 sample-taking video which he claims shows that threads from the seam were woven into the Shroud fabric and included in the sample.

SHROUD NEWS began in 1980 when Rex Morgan, author of three books on the subject of the Holy Shroud (PERPETUAL MIRACLE -SECRETS OF THE HOLY SHROUD OF TURIN, 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 because of its relatively simple method of production it can be written and produced and the information disseminated more quickly than most news-sheets of a similar kind or the more prestigious journals. It contains information, news, articles and illustrations gathered from sources of Shroud study worldwide through Rex Morgan's extensive personal connections with what has been described as the "Shroud Crowd".

Rex Morgan is a frequent traveller overseas and thus has the opportunity to keep abreast of latest developments in Shroud study and research. 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 information about the Shroud has become, as he describes it, a "passionate hobby". He brought the world-famous Photographic Exhibition created by Brooks Institute, California, to Australia, New Zealand, Hong Kong and Macau and during its tour it attracted more than half a million visitors. The exhibit has now been given 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).

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