



SHROUD NEWS

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A NEWSLETTER ABOUT THE HOLY SHROUD OF TURIN
edited by REX MORGAN
Author of *PERPETUAL MIRACLE* and *SHROUD GUIDE*



TITLE PAGE OF THE FIRST BOOK PUBLISHED ON THE HOLY SHROUD BY ALFONSO PALEOTTO IN 1599. IT WAS LATER REPRODUCED BY DISTINGUISHED SHROUD SCHOLAR, DON LUIGI FOSSATI IN 1975

EDITORIAL

The response to *Shroud News* 50, containing a number of contributed articles and smaller items commenting mainly on the recent C 14 tests, was very gratifying. In the past few months we have seen mass hysteria over the claimed mediaeval C 14 dating results announced from Turin and the acceptance of the claim that the Shroud is therefore a forgery by perhaps a great majority of the media-controlled general public in the western world. But we are also beginning to see a re-stimulated interest in the study of the unanswered mysteries of the Shroud by individuals and groups all over the world although I was recently advised of the pathetic news that, as a direct result of the October announcement, the Holy Shroud Society of Western Australia promptly disbanded itself! I have no doubt that under the enthusiastic leadership of Pat Lovatt a phoenix Shroud group will shortly rise from those ashes.

Despite this sort of knee-jerk reaction there is a renewed commitment to finding the truth (if we ever can) by those who simply will not accept that one scientific test can negate the vast "preponderance of evidence" (Dreisbach) for the Shroud's not being mediaeval but most likely much earlier.

There is also renewed interest by some thinking elements of the media in examining more objectively and less sensationally the numerous other aspects of Shroud research ignored in the October and post-October freneticism. We hear that a paper may shortly be published in a prestigious peer-reviewed scientific journal and may reveal a flaw in the 1988 testing. We also hear that several countries have been running recent new television shows on the Shroud and have been re-running the many existing ones. Such interest in the topic is only likely to increase, as it does annually, with the approach of the Easter season in the Christian calendar.

Aside from the argument about one of the 1988 C 14 labs (Zurich) having made substantial errors before, there is an example cited in the *Antarctic Journal* of Sept/Oct 1971:211 wherein a freshly killed seal was carbon dated to 1300 BP and another (*Science* Vol 224, 1984) describes the dating of living snail shells to 27,000 BP. And in *Science* Vol 232 (9 May 1986) we can read of a carbon dating error of 26,000 years on an artifact from the Yukon Territory which had been taken as evidence for human occupation during the Pleistocene Age, a conclusion now discounted owing to the presence of "massive contamination by groundwater carbonates." How much more plausible, one might ask, is the possibility of contamination of the Shroud fabric to produce an error of about 1300 years? Another matter on which I have not commented before now is that revealed by

William Meacham in the report reprinted from Agence France Presse in *Shroud News* 50 (p 25). A number of us in the "Shroud circle" have known for some time that a piece of the "Raes sample" was carbon-dated in California some years ago. The results were, as Meacham states, 200 AD and 1000 AD. Whilst there is no absolute provenance of the thread which was used for that test (owing to its having passed through a number of hands, some of them suspect, since its removal from the Shroud in 1973) it serves to show the unreliability of carbon-dating such threads at all, unless following meticulously protocols of the kind which were proposed by Meacham and others before the 1988 efforts.

The only piece of contemporary mediaeval "evidence" we have for the cloth's possibly being a painting of that time is the very dubious claim made by Pierre D'Arcis in a draft piece of writing thirty years after the event which he claims had occurred. (I should hate to think, for example, that any of the items of draft writing I have done, and which abound in my files, were found by some reader several centuries hence and were regarded either as my considered opinion or as being hard evidence of fact.)

But even if D'Arcis were right and some forger did create the image (leaving aside the insurmountable technical problems of doing so then - or now) the point, surely, of creating such an image would have been to pretend it was Christ's burial shroud. Had it been intended as simply a depiction of Christ for religious or any other reason there is no explanation for the total disregard of the artistic techniques, methods and styles of the time. Thus the forger would indeed appear, instead, to have been attempting a burial cloth reproduction. If one were to make a forgery of an item from antiquity, especially at a time when relic-profiteering was the vogue as the sceptics are quick to point out, I should have thought that Rule Number One from the forgers' kindergarten handbook would be to use a piece of cloth contemporary with the period being purported to be represented or at least from a time as near to it as possible.

So the one simple question I have been waiting for someone else to raise in connection with a mediaeval forgery in response to the announcement that C 14 has dated the Turin Shroud to 1350 and the ludicrous consequent leap of belief that it is therefore a forgery is: Why did the forger do his work on a piece of cloth contemporary with his own time?

Surely the first thing to be noticed by the good observers of the newly created image in the 1300s would have been that the cloth was brand new, if the C 14 date is to be believed. Indeed, it seems to me that there would have been greater evidence for forgery (and, of course for authenticity) if the cloth had been dated as

considerably older. The very claim that it dates to 1350 is sufficient argument that the forger must have been a complete idiot to have taken a piece of cloth from his local weaver's shop and yet the claim of forgery also has to support the view that he was a genius to have been able to produce the image at all.

It seems to me, from this argument alone, that we have not progressed at all in the matter of the age of the cloth at Turin with the events of 1988. As Professor Luigi Gonella himself says in an article reproduced in this issue of *Shroud News*, "The problem remains as open as ever."

REX MORGAN

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An article by Revd Fr Albert R. (Kim) Dreisbach, Jr., an Episcopalian priest and Executive Director of the Atlanta International Center for Continuing Study and Exhibit of the Shroud of Turin. He is one of the foremost Shroud experts in the USA.

ONE SHROUD, A THOUSAND MYSTERIES

A masterly summary of the present position written by Professor Luigi Gonella before the October test results were announced. Professor Gonella is the Scientific Adviser to the Turin Shroud authorities and a world expert on the Shroud.

FURTHER EVIDENCE OF PONTIUS PILATE COINS

Italian Professor Mario Moroni of Robbiate summarises some of his study on the coin-over-the-eye images on the Shroud.

NEW TESTS FOR THE CLOTH

A reproduced summary of the plans for new tests by the International Centre for Sindonology

A TIME TO SING A NEW SONG BY THE BANKS OF THE RIVER CHEBAR
by Revd Fr Albert R. Dreisbach, Jr

With the announcement of the C-14 date as "medieval", those of us who continue to believe in the Shroud's authenticity suddenly find ourselves being called by God to be "tested" once again in the crucible of public opinion and personal spiritual integrity. In a sense, we are being exiled from our lofty position over the past decade as "proclaimers of the Shroud's authenticity". Opponents will dance with glee convinced that they were right, and many fellow Christians will label us as perpetuators of a fraud. We can expect to be hounded by our detractors and shunned by some whom we thought were our friends.

In the divine economy, new birth always exacts the price of pain; the Exodus preceded the gift of the Promised Land; the Babylonian exile came before the return to Israel and the building of the Temple; Good Friday had to be endured before Easter could joyfully be proclaimed. In each of these mile-stone events in the unfolding of the spiritual pilgrimage of the people of God, His servants have been called upon to experience "a dark night of the soul." My brothers and sisters, that time has come for those of us who serve the Apostolate of the Holy Shroud. Over what has happened, we have no control. How we respond to it is a test of our own spiritual maturity. Expose three different substances to fire: a wood shaving will be consumed and disappear, wax will melt and take on a new shape; but an iron filing will be tempered and emerge even stronger than it was before such an ordeal. The choice is ours. Those who choose to become tempered like the iron filing will determine the future of sindonology and the restoration of the Holy Shroud to its rightful place as "God's love letter in linen for all mankind", as the most significant visual aid for Christians to employ in teaching their own about the Passion, Death and Resurrection of their Lord and Saviour, Jesus Christ.

Like the prophet Ezekiel, we are being called by God to assure our hearers of the abiding presence of God among us during this time of trial and exile on the stage of world opinion. Though we do not know the divine rationale for the present set of circumstances, our task is to continue to proclaim the Shroud's authenticity so that the faithful "will know that I (i.e. He whose sacred Image appears on the Holy Shroud) am the Lord." The latter refrain occurs numerous times throughout the Book of Ezekiel; and its theological truth is as valid for today's Shroud Crowd as it was for 6th century B.C. Israelites during their Babylonian captivity. We too are being called to "sing a new song" on the banks of the River Chebar even though 20th century tears of disappointment may temporarily blind us from discerning God's plan for the "restoration" of the Shroud's authenticity in the eyes

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of the world. Even in exile, God promised: "*I will not hide my face any more from them, when I pour my Spirit upon the house of Israel*" (Ezek. 39:29). Even as the disciples hid in fear on Good Friday believing that they had followed a "false" Messiah, their faith was to be restored on Easter morning when an empty tomb with its seemingly empty linen shroud proclaimed the fullness of Resurrection power. One of the clues to that Event of all events was the cloth which remains with us to this day locked securely in its silver casket in Turin's Cathedral of St John the Baptist. The same Holy Scripture which describes the flattened/collapsed presence of that Shroud in Joseph of Arimathea's tomb also proclaims: "For it is God ... who has shone in our hearts to give the light of knowledge of *the glory of God in the face of Jesus Christ.*" (II Cor. 4:6).

God not only has preserved the Shroud since that first Easter morning nearly two thousand years ago; but He has also provided us with a preponderance of evidence - both from the hard sciences and numerous other academic disciplines - which argues for the authenticity of Turin's burial linen. Since 1898 when Pia took his first photograph, researchers from fields as diverse as archaeology to iconography have provided layer after layer of substantiating evidence which, until the recent "medieval" (sic) announcement, has displayed the "luster" of a pearl of great price. Churchmen have had their faith deepened through contact with the Shroud, appreciated as never before both the details of the Passion and a graphic vividness of what it means to be told "that by His stripes, you are healed" (I Pet. 2:24). The Shroud has forced doubters to question their very doubt, bringing even some of them into full-time ordained ministry as I have witnessed with my own eyes. In addition to its value for Christian Education and low level Evangelism to the rational empiricist skeptic of our day, it also serves as a marvellous bridge for Ecumenicity just as its historical travels have exposed it to the Greek Orthodox, then the Roman Catholics, and now the multi-faceted Protestant community. Even the scientists in the three laboratories who now tell us that it is "medieval" all agree that **it is not a painting**; furthermore, they have stated that the method of its "image formation" still remains unknown - **a mystery**. Even Dr Richard Lockett of Cambridge University's Magdalene College who contends that it is "medieval" concludes that the image results from a real human being who was crucified exactly in the manner of the historical Jesus of Nazareth.

It is not the purpose of this paper to provide a laundry list of all the facts which comprise the totality of the PREPONDERANCE OF EVIDENCE - scientific and otherwise - which argues for the Shroud's authenticity. To do so would require a tome the size of an encyclopaedia merely to provide a synopsis of these "facts" together with the briefest of bibliographies supporting same. Where would such a

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list begin and end?With the unique 3-dimensional quality of a 2-dimensional photograph? With the total absence of pigment, ink dye or stain? The lack of brush stroke, directionality or capillary flow? The fact that the Face of the Shroud has 170 points of congruence with an encaustic icon at Mount Sinai of Jesus' "portrait" painted between 550 and 590 A.D. given the fact that modern day criminologists require only 45 to 60 such points of similarity for a positive match? Would a cloth manufactured in the 14th century bear a preponderance of pollens from Israel and the Anatolian steppes if it were of European origin? Would a forger be clever enough to paint a full image of a body in the "negative" 400 years before the invention of photography? And even if he had, would he have employed two different methods of image formation - positive for the blood and negative for the body image - in a single work? And even if a real body were employed as claimed by Dr Lockett, would a medieval forger have ever thought of adding dirt to the feet - dirt which Dr Joseph Kohlbeck of the Hercules Aerospace Laboratory at Salt Lake City has determined to be **travertine aragonite** - a rare variety of calcite that matches the spectrum of the **travertine aragonite** from the cave tombs near the Damascus Gate in Jerusalem?

On and on such a list could go, and yet we all know that in the unreflective minds of the general public the alleged "medieval" C-14 date is likely to be the most dominant factor in determining that the Shroud is a "fake". Subtleties in the violation of the origin C-14 protocol by the three laboratories involved, suspected collusion regarding the newly-developed cleansing mechanism employed by all three, even the site of the samples taken - from an exposed edge most likely to have picked up the greatest degree of contaminants through the ages - will not be considered at all by the general public in its rush to affirm the findings of a C-14 dating process which they do not begin to understand.

What then are we to do, we who continue to know both in our hearts and in our heads that the Shroud of Turin is the authentic burial linen of Jesus of Nazareth? Like Ezekiel, we must preach hope even while in exile; Like Isaiah we must trust in God's word to "fear not" (Is 35:4) and rest in His assurance that a **faithful remnant** will return to Turin for future testing. God is in control of history, and will bring the promised "redemption" of STURP in the eyes of the public. Like Peter, we must be bold in our proclamation even when opposed by the contemporary C-14 "rulers" of the moment. At Pentecost, the Big Fisherman, in the face of the scoffers of his day, saw fit to quote David:

"I **saw** the Lord always before me, for he is at my right hand that I may not be shaken;

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therefore my heart was glad, and my tongue rejoiced;
moreover my flesh will dwell in hope.

For **thou wilt not abandon my soul** to Hades,
nor let the Holy One see corruption.

Thou has made known to me the ways of life;

thou wilt make me full of gladness with thy presence. (Ps. 16:8-11)

Shortly thereafter, preaching at the Temple after a miraculous release from prison where he had been placed by the high priest together with the council and all the senate of Israel, Peter and the apostles continued to proclaim their "naive" and unpopular Gospel, justifying their actions by stating: "We must obey God rather than men." (Acts 5:29). Among those present that day was a wise man, a Pharisee and teacher of the law "held in honor by all the people", the very teacher of an early persecutor of the Church named Saul of Tarsus who was to become one of its greatest promoters following his own conversion on the Road to Damascus. This man's name was Gamaliel. With a wisdom which only God can provide, he addressed the crowd that wanted to kill Peter and his companions and uttered the following truth:

"Men of Israel, take care what you do with these men ...

For if this plan or undertaking is of men, it will fail;

but if it is of God, you will not be able to overthrow them.

You might even be found opposing God!" (Acts 5:35 & 38-39)

With historical hindsight, we now know that Gamaliel was correct. Peter and Christianity were vindicated by God; and the Churches in which we worship stand as a testimony to the truth of Gamaliel's insight. God took **ordinary men and women** like us today who hold the Shroud to be authentic; and, with them, accomplished **extraordinary things**. The biblical theme for this vindication of the faithful has deep roots. God slew the Midianites, but Gideon was chosen to be the "vehicle" for their defeat. Joshua and Caleb went out against the *anakim* - the "giants" of the land - but Jericho fell to "the little people" who trusted in God. A youthful David brought down a colossal opponent in Goliath because he also had been chosen for the task. Brothers and sisters, the same biblical scenario exists at the present moment; and, *mirabile dictu*, we in the Shroud Crowd have been chosen to battle the "giants" of the C-14 community - not because we are "holy" or deserving in any way, but simply so that God's truth may be proclaimed to all the world through us. If the erudition of our membership is greater than that of the

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public whom we seek to convince of the Shroud's authenticity, let us ever be on guard against the sin of academic pride by keeping constantly before us the godly truth that "unto whom much is given, much is required." (Luke 12:48).

On an evening in 1978 during a Labor Day weekend chosen for STURP's "dry run" members of STURP gathered in at the Amity Church in Amston, Connecticut, for a parish supper and a worship service. During the course of same, the pastor, the Rev. Joey O'Brien, delivered a prophecy in which the team was told that some day it would be permitted to be involved in a "second" round of testing - a round which would produce even more marvellous results than they would obtain from their 1978 testing. The time for that "second round" is NOW. Despite all the delays and disappointments in the intervening years, STURP is again being invited by the Lord to share His "table fellowship" in Turin. The amazing traces of His Body and Blood, already consecrated and glorified by God, will again be made available to the scientific community for further study. I have no doubt that once again "the last shall be first" - that is to say that STURP's new discoveries will add weight to the ever-growing PREPONDERANCE OF EVIDENCE revealed by God to overcome public credulity at having too easily accepted the fallacious C-14 results labelling the Shroud as "medieval" (sic.)

While we gird our loins to launch a "laboratory counterattack" to vindicate the Shroud's authenticity, we must remember that EMPIRICAL EVIDENCE does not automatically guarantee PUBLIC ACCEPTANCE of that PEER-REVIEWED TRUTH. We have only to recall the name of Galileo to remind ourselves of this reality. Scientific journals and other Shroud publications may well serve to win the MINDS of the dedicated few; but FACTS ALONE are insufficient to claim the HEARTS of the many. Whether it be a Dr Albert Einstein or a Bishop John A.T. Robinson, pioneers by definition must go through a period of waiting before the territory which they have discovered becomes a safe and settled community for those who follow. In truth, more people have become "converted" to the Shroud's authenticity via lectures, exhibits, movies and TV productions that have been impacted by the sum total of all the carefully researched papers and books written on the subject. The vast majority of people are unwilling to sacrifice the time and effort to do their own "homework", preferring instead to feed upon the predigested "chewings" of others.

To those with an empirical bent, the above reality often means little. "Truth is Truth", and if the myopia of the public cannot perceive and acknowledge same, then it is "their problem". While this argument is valid on a strictly EMPIRICAL basis, it does not do justice to either the EXISTENTIAL or the THEOLOGICAL dimensions of the problem. Though the pure **scientist** may rightfully limit him or

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herself to the question: "What is the nature and/or what are the components of that which we have been asked to analyze?" **theologians** are trained to ask questions which go beyond the limits or competence of the laboratory, i.e. what does it mean. What is God's purpose in making this artifact available to us? Why, of all the experts in all the world in my field of specialization have I been chosen to be part of this unique team given access to the Shroud?

Though those not professing Christianity are under no obligation to pose such questions, the Christian who is a scientist, scholar, cleric or informed lay person is duty bound to reflect upon such implications. For them, God is Lord of all, the Creator and Ruler of the universe, and He has created nothing without purpose. One cannot worship Him in the sanctuary and simultaneously abandon any consideration of Him in the laboratory or the library. To do so would be guilty of theological schizophrenia - a split personality which acknowledges His Transcendence while simultaneously denying His concrete Imminence in the world which He has fashioned. Christianity is the most "material" of all the world's religions - most supremely so in the Incarnation, the World made flesh.

For those of us who are champions of the Shroud's authenticity, we would do well to consider GOD'S PURPOSE for us at this moment in history. On October 16th, *The Times* of London ran an extensive editorial on the implications of C-14 dating entitled "Testing Faiths." The last paragraph contained the following pregnant insight:

"AN AUTHENTIC TURIN SHROUD IS TOO AMAZING AN OBJECT TO HAVE BEEN LEFT IN THE TOMB BY ACCIDENT, PERCHANCE TO BE FOUND AND KEPT, PERCHANCE TO HAVE SURVIVED UNTIL SCIENTIFIC PROGRESS COULD REACH A POINT WHERE IT COULD UNLOCK THE SECRET. IT IS ALMOST AS IF GOD HAD CALCULATED THAT SOME 2,000 YEARS AHEAD SCIENCE WOULD HAVE REPLACED THEOLOGY AS THE COMMONLY-ACCEPTED ARBITER OF TRUTH, AND PLANNED ACCORDINGLY."

All I would care to add to this profound insight is to extend the final sentence by including "BY LEAVING THE APPROPRIATE CLUES." In so doing, God has given each of us the same opportunity as Peter and John to see the burial garments of the historical Jesus of Nazareth (John 20:6-7). But, as both the Gospel John and the late Bishop John A.T. Robinson make abundantly clear, such a vision brings with it no special blessing (Jn. 20:29) - rather special responsibility (Jn. 17:18-21). A careful reading of the Holy Scripture will enlighten us to the fact that

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with every post-Resurrection "appearance", there is also a concomitant "commission to mission". That "mission" for professed Christians in the Shroud Crowd is to "lift Him up so that all may be drawn unto to him" ... to get "beyond the linen to the Lord" ... to proceed beyond learning "facts" about Him to the exercise of concrete service in His name. No matter how many marvellous "facts" are revealed to us in our continuing investigations, they can easily become nothing more than "religious erudition in pious garb" unless they lead to a deepening of the students' own faith reflected in **concern for** and **service to** those for whom the Man of the Shroud came to save - the dispossessed, the poor, the victims of injustice, the neglected and all the others for whom He lived, died and rose again. Beyond any secrets which it may contain, the latter is the real MESSAGE and MISSION of the Shroud - the PURPOSE for which God has preserved it, and the sacred OBLIGATION of those of us few who are privileged to make the discoveries which are then displayed for the public.



Revd ALBERT R. DREISBACH Jnr with his daughter Dede and author Rex Morgan at the Atlanta Shroud Center, Georgia, in 1985

ONE SHROUD, A THOUSAND MYSTERIES

by Professor Luigi Gonella, Turin, Italy

Professor Luigi Gonella, the Scientific Adviser to the Cardinal Archbishop of Turin, has been widely criticised for his apparent handling of the 1988 C-14 testing of a part of the Turin Shroud. Nevertheless this article, written during 1988 and before the results were announced, is a masterly summary of the position at that time and, indeed, at this time. It was first published, we understand, in 30 days, September 1988.

Cicero called crucifixion *crudelissimum et taeterrimum supplicium*, a most cruel and hideous torture. No object provides clearer evidence of that judgment than the Shroud of Turin. In graphic and incredibly accurate detail, the Shroud depicts the suffering of a crucified man. But the Shroud is not the object of intense study because it helps us to understand what it meant to be crucified. It is the object of intense study because of the mysterious image it bears, the image of a crucified man.

The Shroud is a large rectangular linen cloth measuring about 15 feet long and three and a half feet wide (4.3 by 1.1 meters) marked with the life-size image of a man. There are, in fact, two images, one frontal and the other dorsal. The cloth is spotted with blood-like stains, and the distribution of the stains on the cloth corresponds with what we know (from the New Testament) about the particular wounds Jesus received during his Passion. According to tradition, the Shroud was Jesus' burial cloth, the linen used to wrap his body in the tomb.

The documented history of the Shroud, however, goes back only to the 1300s. Records show that the cloth was exhibited in 1357 in

Lirey (in the province of Champagne, France), was moved to Savoy a Chambéry in 1453 and then to Turin, Italy, in 1578, where it has been ever since. This gap of 13 centuries between the time of the Shroud's alleged origins, and the very strangeness (to say the least) of a burial cloth bearing the image of the man buried in it, prompt a natural thought: that the Shroud may be a medieval forgery. Indeed, when the Shroud was displayed in Lirey in 1357, a contemporary bishop denounced it as fraudulent. This is the position taken, for example, by the American Walter McCrone, who in 1980 published his conclusion that the Shroud was finger-painted shortly before 1357 by an artist using iron earth pigment plus a tempera medium. But the singular characteristics of the cloth's human image and the blood-like stains revealed by modern science are not in keeping with known medieval capabilities. Scientific investigation, therefore, has focused on this question: How was the image formed?

The Shroud of Turin has been the object of scientific research for about 90 years. In the last decade, this research

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has entered a new phase. Modern science has entered the picture. We will synthesize here, in a necessarily schematic way, the results of this research and touch on the problems that remain open. We will refer to the major scientific articles published on the subject, since much of what has appeared in print on the Shroud has been in a highly popularized form.

Popular attention has centered on the most obvious question about the Shroud, its "authenticity": were the image and the blood-like stains manufactured, or were they the result of an interaction of the cloth with the body of a crucified man? The problem that the Shroud poses to science, however, is different: what is the physical and chemical nature of the image and the stains? How were they formed? These questions would remain open even if, between the layers of the cloth, one found a parchment signed by Pontius Pilate guaranteeing its authenticity, and they would also remain open even if one had physical or historical proof that it was from the medieval period.

The problem of the Shroud's authenticity must be divided into two questions: 1) Is the image on the Shroud the result of the interactions between the cloth and the body of a crucified man? and 2) Was this crucified man really Jesus, as tradition claims, or was he another man, tortured in the same way Jesus was tortured? The second question is probably outside the scope of the physical sciences, given that we do not have an *identikit* for Jesus Christ. Still, it must be noted that the Shroud does not pose any theological or religious problem: however wonderful it would be if this were a true relic of Jesus, this would add

nothing to faith in His divinity, nor to the historical proof of His life on earth (it is not the relic which proves the saint, but proven holiness which gives worth to the relic).

An image can be of color or only of intensity (a black and white image). It can be created by materials (pigments or tints) or changes in the chemical structures of a material (the scorching of a fabric, for example). The image on the Shroud is monochromatic and very tenuous — a maximum contrast of 3%, almost at the limit of visibility. The blood-like stains stand out because of their different, more intense color. The whole is marked by two parallel lines - of scorch-marks and holes caused by a fire at Chambery on December 4, 1532.

The first photograph (Secondo Pia, May 28, 1898) revealed that the structure of contrast of the image is inverted in comparison with a picture in black and white: the negative of a photograph of the Shroud has the appearance of a portrait, and thus the Shroud's image is like a photographic negative. This places it outside of the technical-cultural context of the Middle Ages. The photographic negative revealed a wealth of detail that cannot be seen under direct observation. A medical investigation conducted on the basis of the negative showed an anatomical accuracy foreign to medieval culture, and also not in accord with the traditional iconography of the crucifixion. (For example, the wounds of the nails in the wrists and not in the palms of the hands.) To the pathologist, it seemed that the Shroud had in some way "photographed" the cadaver it enfolded. Therefore, the hypothesis was advanced that this "photograph" might have been created by the interaction

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of fluids from the corpse and chemicals (aloes and myrrh) present on the Shroud. But this hypothesis found little scientific support.

The quantitative approach to the problem of the image on the Shroud was first addressed in 1975 by U.S. Air Force scientist John Jackson. Jackson set out to find possible correlations in the spatial distribution of the image's intensity, measuring the photographs point by point with a density meter. His result: that the structure of contrast in the image correlates with the distance between a fabric extended over a supine body and the surface of the body lying below it. Jackson went one step further. Using a computer program, he calculated the intensity values on a vertical axis and displayed them graphically. He obtained a well-proportioned three-dimensional picture of the body. The picture was even clearer when he corrected to account for the curvature of the fabric draped over the body.

This is a truly extraordinary characteristic of the image, and it must be explained. How could a two-dimensional phenomenon of contrast encode three-dimensional information? The codification of three-dimensional information in the structure of contrast is an unheard of phenomenon. All of our pictures of the external world come to us by means of reflected light, and this reflected light has quite a different intensity configuration. From the physical-photometrical point of view, the Shroud image appears to have been created by a rush of radiation which grew more attenuated with distance.

This hypothesis of radioactivity has been greatly popularized, denounced as "miraculistic," and completely misunderstood.

The point is, whatever the mechanism of the formation of the image, its final global result is the same as that which would have been produced by a flood of intense radiation. But what was the mechanism? Scientists still do not know. To obtain such an effect with the eye-hand coordination of an artist appears technically impossible, given the limits of contrast of the human eye (and it is certainly outside the context of every painting technique ever used). Scientists are not aware of any phenomenon that can produce effects of this kind through interaction with a human body. Every mechanism of formation by simple contact between the fabric and the body must be excluded because such contact could not transmit three-dimensional information. One can obtain an image of the type through brief exposures of the fabric to a hot bas-relief, but the chemical characteristics of the Shroud's image are different from those of a scorching.

Most of the direct measurements of the Shroud were made between October 9 and 13, 1978 by the Shroud of Turin Research Project (STURP), a group of American scientists gathered together around Jackson. In the course of the work, the Turinese group of G. Riggi joined the STURP team. The research was self-financed and carried on entirely on the initiative and under the responsibility of the scientists themselves, not on behalf of the Church. Since it was a matter of direct operations on the Shroud, the Archbishop of Turin, Cardinal Anastasio Ballestrero, the Shroud's custodian, reserved for himself the right to appoint experts he trusted to supervise the work. These experts had the task of verifying the scientific level of the researchers and the lack of material danger posed to the Shroud by the

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proposed operations. For this supervision, Cardinal Ballestrero turned to the Turin Polytechnical Institute, and the Institute indicated to him the name of the present author. The STURP results were published in about 20 articles in respected scientific journals. In the examinations of 1978, which involved 52 people over 120 hours, other groups also participated. The aim of the research was a wide-ranging examination of the surface of the Shroud, with non-destructive methods to answer the two questions on the nature of the image and blood-like stains and on the mechanism which created them. It was therefore necessary to study the atomic and molecular structure of the surface. For this the right instruments are electromagnetic waves, from x-ray to infrared, and the chemical analysis of tiny portions of the surface. These were lifted off the Shroud by the application of adhesive tape. It was a great multi-disciplinary work in which the results of each line of inquiry were compared and verified with those of every other. The results may be synthesized as follows:

1) The image and the blood-like stains have very different natures. The blood-like stains are evidently due to a material of a viscous type that penetrated and soaked through the fabric. For the image, on the other hand, no material cause (paint, dye) was found. The image is strictly superficial. Only the fibers of the outer layer have changed color, while those on the inside are intact.

2) The image is invisible in transmitted light and in radiography, does not show the fluorescence which is characteristic of scorching, does not change color as it nears the scorched zone.

3) The material of the blood-like stains appears to be whole coagulated blood. It is a protein substance without any additives. It responds positively to diverse tests for the presence of substances which appear in blood (like hemoglobin). On the edges, intermixed with the blood-like stains, there are stains, invisible to the naked eye, of a protein-like material with fluorescent and chemical reactions consistent with those of blood serum.

4) The different color of the superficial fibers that constitute the image appears due to the oxidation-dehydration of the cellulose.

5) Under the protein patina, the fibers of the blood-like stains have the original color of the linen, not that of the image. This indicates that the blood arrived on the Shroud before, the image was formed.

We thus have a rather exhaustive answer to the question of the nature of the image and of the stains. But we are no closer to a solution to the question of how the image was formed: The chemical-physical picture of the blood-like stains indicates that these were formed by contact with a wounded body, but the characteristics of the image excludes a formation by contact. None of the hypotheses advanced up to now succeeds in explaining all of the characteristics of the image and the stains.

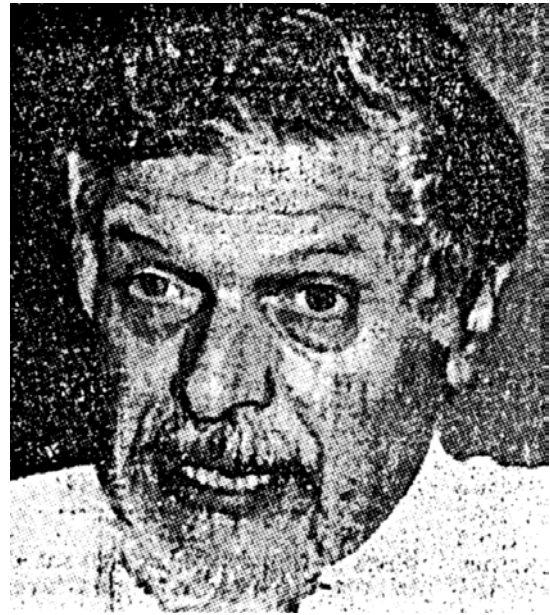
There are now underway in three specialized laboratories tests to date the fabric of the Shroud (carbon 14 dating). The small pieces of the Shroud on which the tests will be performed were removed on April 21. This test

ONE SHROUD, A THOUSAND MYSTERIES

(cont'd)

also is being carried out at the request of the scientists who are making it. There has been a desire to attempt to date the Shroud for a long time, but only in the last few years has the technique of radiocarbon dating arrived at the point where it could be done on very small pieces of fabric. It was only in 1984 that an acceptable proposal of dating was made. The decision on how and where the test would be made sparked considerable controversy because too many laboratories wanted a piece of the Shroud. Some scientists seem to forget that the Shroud is not an object in the public domain. The Shroud has clearly defined custodians who cannot give up a piece of it without well-documented motives that are strictly scientific. The measurements ought to furnish the date of the fabric with a margin of error of two or three centuries, enough to determine whether it is medieval or from the time of Christ. This, of course, does not say anything about the formation of the image.

More research is planned on this problem, and this time the research will be related partly to the problem of conservation. A rational system of conservation and display of the Shroud must be found, and it is not easy to decide how to best conserve an object if one does not know how it was formed. The experience of those who preserve and display paintings is obviously not relevant. The formation of the image by oxidation implies that it could gradually disappear by the obscuring of the oxidation from below — something that places many limits on the proposed means of preservation and display. The problem remains as open as ever.



Professor LUIGI GONELLA, Scientific Adviser to the Cardinal Archbishop of Turin, Custodian of the Holy Shroud

FURTHER EVIDENCE OF PONTIUS PILATE COINS**by Prof Mario Moroni, Robbiate, Italy**

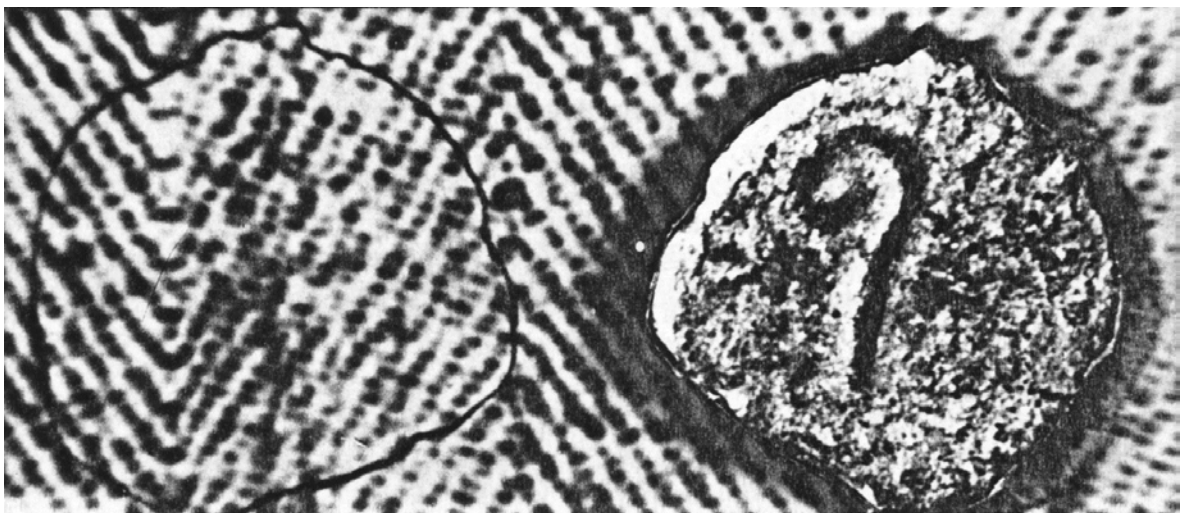
On the burial cloth, corresponding to the right eye-socket area of the Man of the Shroud, there is visible a small staff with a crooked end which is identical, in shape and dimensions, to the one that appears on the *dilepta lituus* issued by the Roman Procurator, Pontius Pilate. Since the impression of the staff, transferred onto the Shroud, assumed the profile of a "reversed question mark", as a consequence the crooked staff on the coin must have the shape of a question mark. The search for this new, previously "unrecognized" coin type was brought to an end by the discovery of such a coin having the date XVI of Tiberius (29/20 A.D.) on the reverse. We also have the unexpected confirmation of another coin with the typical symbol of the "Lituus" reversed published in a recent edition by Meshorer.

The evidence of archeological findings is in favour of the funerary custom of putting small and light coins on the eyes of the dead. Similar coins, issued by the Asmonean Princes, the Idumean Kings and the Emperor Adrianus, were found in skulls, biers and, corresponding to the eye-sockets, inside skeletons found near Jericho, the Dead Sea and the En-Boqeq Fortress.

In spite of many objections raised earlier concerning the coin theory (first published by Filas) we have conducted experimental proofs, the most significant of which is that which demonstrates that the weight of a *dilepton lituus* (1.20 grams) is enough to keep the eyelids of a corpse closed.

Moreover, it should be emphasised that the photographs of the right-eye socket area, shown by us, have not been obtained from third-generation prints but, on the contrary, have been countertyped, that is obtained by direct contact with Enrie's original negative plate (40cm x 50cm) where the Face is life-size.

Is it not possible that the presence of the Pontius Pilate coin on the Shroud image is a more exact proof of age than the recent radiocarbon dating?



NEW TESTS FOR THE CLOTH

An article by Mirella Pennisi reproduced from *30 DAYS*

"The current state of knowledge about the Shroud was inadequate to permit an examination like the radiocarbon dating test. This is why there has been controversy about the validity of the results." Thus Prof. Alberto Brandone, professor of radiochemistry at the University of Pavia, sums up the conclusions of the recent first plenary gathering of the International Center for Sindonology [Studies of the Shroud].

So what next? "The center has already prepared a research program which will include, along with studies planned previously, a number of additional tests in order to determine the degree of carbon contamination of the linen during past centuries. The program also calls for research in new and alternative methods of dating," Brandone said.

The tests listed in the preliminary draft of the research program, which the Center presented to the archdiocese of Turin at the end of 1988, are divided into three major groups.

1) A study conducted by Prof. Gino Zaninotto of the University of Rome and Dr. Gian Maria Zuccone of Turin to ascertain, with the aid of documents published on the Shroud, what kind of contaminations have been recorded already in literary texts. In particular, the study will focus on the historical truth of the story that the

Shroud was "boiled in oil." The story is only recorded by one historian, Antoine de Lalaing, and some consider it only a legend.

2) A calculation of the amount of oily substances, black smoke, and substances contained in human sweat and human saliva there is present in the Shroud. The study will exclude the derivatives of aloe and myrrh, which have already been confirmed by previous studies, since these substances are considered contemporary to the Shroud itself. This study has been assigned to Prof. Baima Bollone and his research team at the Chamber of Commerce in Turin.

3) An experimental test in order to determine the influence of a boiling in oil on radiocarbon molecules. In order to carry this out, Prof. Alberto Brandone, the research supervisor, will take an Egyptian cloth previously dated by the Carbon-14 method, boil it, then repeat the dating test. Any dating variation should yield a key for a possible interpretation of the results of the C-14 dating already carried out on the Shroud.

The second block of tests aims at a more precise definition of problems already studied. They consist of:

1) New tests on the traces of blood in the Shroud in order to define more accurately the

identity of the man who was supposedly wrapped in it.

2) Research on the traces of blood and their specific properties taken from different areas than the ones previously examined (namely around the rib cage and the head, which up till now have been disregarded by researchers) in order to demonstrate that the Shroud has not undergone any later retouching.

3) New and technically sophisticated microscopic tests in order to find the presence of two proteins on the Shroud linen (fibronectine and osteonectine) in order to show whether the wounds traced on the image were inflicted on a living man. A dead body does not synthesize these proteins; only a living body can produce them.

4) An analysis of the supposed inscriptions found on the cloth in order to define their historical era (the type of writing suggests that the characters come from the 2nd century).

5) A new attempt to explain the mysterious formation of the Shroud image through an experimental technique: mass spectrometry using an ion laser. The test takes time, however. Only two or three laboratories with this equipment exist in the world. The method is still considered experimental by Prof. Pietro Benetti's team at the University of Pavia. Results from such

NEW TESTS FOR THE CLOTH (cont'd)

tests will not be available in less than two or three years.

The research program of the International Center for the Study of the Shroud will conclude with what may be the most important test: a new attempt at dating the Shroud linen through the method used for dating cloth specimens. The technique has been developed and used by Prof. Diana and his team at the National Restoration Lab in Rome, to whom the research project has been assigned.

The test is based on the principle of the rate of decomposition of a plant's protoplasmic substances, substances which are also

found in linen fibers. The test has a very low margin of error (no more than plus or minus 60 years). The protoplasm is normally not contaminated by outside factors.

But there is one problem. In order to conduct his analysis, Prof. Diana needs 50 milligrams of cloth (about the size of a stamp) which scientists at the Center do not have. In fact, all they have left are a few threads taken from the Shroud cloth during the 36-hour study session back in 1978. Those threads are insufficient for the test.

To obtain more material, the Turin archdiocese would have to allow the Shroud to be cut

again. It is not clear whether Cardinal Ballestrero would consent. Sources within the Turin curia say Ballestrero has already refused his consent for any other hypothetical tests).

Still, at the end of the October 12 news conference at which the final results of the radiocarbon dating were made public, the Cardinal himself declared: "The Church is always ready to undertake new research projects. The problem of the Shroud's image and its conservation is still unresolved and requires further research. The Church, inspired by love of truth, will show the same openness toward new research as it has shown all along."

IMPORTANT DEVELOPMENTS IN TURIN

The Centro Internazionale Di Sindonologia (International Centre of Sindonology) based in Turin, Italy, appears to have been in recess since the death of its secretary Don Piero Coero Borgia in September 1986. The above report is based on interviews given after a recent conference of the Centre's new Steering Committee and other representatives on 5th November 1988.

This is very good news as the Centre has a vast library and collection of resource material and original items connected with the Study and history of the Shroud which itself resides a few streets away in Turin. The newly revived activity of the Centro has resulted in a well produced eight-page bulletin, the first issue of which is dated December 1988. At least two of its articles are presented in both Italian and excellent English. Amongst other significant items the bulletin announces that the journal *SINDON* will re-appear early in 1989. *SINDON* is the largest of the prestige journals of sindonology and had appeared annually since 1959.

In the next issue of *SHROUD NEWS* we shall publish the Official Announcement made by the International Centre concerning its conclusions reached in early November.

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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