

## NEWS FROM AROUND THE WORLD

### From Russia:

#### *Dr. Dmitri Kouznetsov - Four Important Papers to Appear in Scientific Journals*

The Russian scientist **Dr. Dmitri Kouznetsov** (*right*), whose questioning of the Shroud carbon dating has been featured in earlier issues of this Newsletter, was in the United States in April as one of the speakers at the American Chemical Society's 209th National Meeting and Exposition, held at Anaheim, California April 2-6. On Sunday 2 April, **Dr. Alan Adler** opened the session on Archaeological Chemistry with a paper 'Updating the shroud of Turin'. Later in the morning Dr. Kouznetsov's theme was 'The Shroud of Turin: A progress report on research into the old textile radiocarbon dating results.' On Wednesday 5 April Dr. Kouznetsov spoke on 'Analysis of cellulose chemical modification: A potentially promising technique for characterizing cellulose archaeological textiles.'

Dr. Kouznetsov's paper 'Detection of Alkylated Cellulose Derivatives in Several Archaeological Linen Textile Samples by Capillary Electrophoresis/Mass Spectrometry' was published in the American Chemical Society's international scientific journal *Analytical Chemistry* on 1 December 1994. This shows how in a series of ancient linen samples, including one from En Gedi, Israel, dating from around the time of Christ, the composition of the cellulose of the linen has become modified over time in ways that may well affect any radiocarbon dating reading. [Xerox copies of this highly technical paper can be obtained via the Editor.] Dr. Kouznetsov has telephoned from the States to say that he has another three related papers appearing in English-language scientific journals in the course of this year, and that *in toto* these may well raise the need for a serious re-appraisal of the carbon dating as carried out in 1988.

### From San Antonio, Texas

#### *Dr. Garza-Valdes Claims Fresh Findings:*

When this Newsletter was about to go to press Dr. Garza-Valdes telephoned from Texas to say that he had important new findings to announce on 24 May. This issue of the Newsletter was therefore held for several days to allow for this. Dr. Garza-Valdes's press release, as faxed from the United States, reads as follows:

#### *Microorganisms Encase the Shroud of Turin and Pre-Columbian Tomb Artifacts in Protective Coats of Biovarnish*

A team of National Science Foundation-funded microbial physiologists interested in ancient burial artifacts have discovered microorganisms that form biogenic varnishes which coat the surfaces of ancient artifacts found in pre-Columbian burial tombs, as well as desert rocks. The microbes biovarnish sand particles in the California desert and keep it from shifting about like the dunes of the Sahara. More recently, it was discovered that the Shroud of Turin, which is claimed to be the burial cloth of Jesus of Nazareth is also encased in the microbial biopolymer.

Upon hearing about these findings during an NSF "outreach" visit to the Health Science Centre at San Antonio, Robert Uffen recognized the novelty of the project and its importance to our understanding about biodiversity and the remarkable versatility of microbes in nature.

Subsequently, work has continued by the research team lead by Stephen Mattingly, a Ph.D. at the Health Science Centre, and by Dr. Leoncio A. Garza-Valdes, an M.D. with interests in archaeology and microbiology. The project is currently supported by a Small Grant for Exploratory Research (SGER) award from the Metabolic Biochemistry programme. SGER are grants reserved by the NSF to support "high risk" research projects.

Microscopic observations of fragments of the Shroud revealed that individual fibres of the Shroud are coated with a film infested with both fungal and bacterial-like microbes. This biofilm proved to be extremely strong and resisted treatment by cellulase and alkali, which acted to dissolve the linen cellulose threads of the Shroud and leave behind a resistant bioplastic coat of the fibres themselves.

In addition to the biofilm-forming microbes now being studied in their laboratory, a collection of haloalkaliphilic (salt-loving, alkali-resistant) microbes have also been isolated from the Shroud which are tentatively identified as *Natronococcus*, *Natronobacterium*, *Nocardiosis*, and *Synechocystis*. Why the Shroud should be covered with these cells is not known, but it could be significant. During the first century A.D. in the area of Palestine, natron (sodium carbonate) was used in the bleaching of linen as well as an important ingredient in perfume and resins (myrrh) used for burial.

Dr. Garza-Valdes presented his initial finding on the Shroud in Rome, June 1993. However, the observation now that the threads of the Shroud are not linen cellulose alone, but rather are fibres infected by microbes and encased in a microbial biofilm deposit, could bring about new dating of the Shroud. It is possible that the recent radiocarbon dating of the Shroud between 1260 to 1390 A.D. (*Nature* 337 [1989]: 611-615) will be in error once pure cellulose strands are examined.

## **From London**

### ***Image-bearing 'Shroud' at the British Museum's Byzantium Exhibition***

The British Museum's 'Byzantium' exhibition closed recently. Among several exhibits of Shroud interest, centrally displayed were two sixth century Byzantine curtains [*see above*] woven in a combination of wool and linen, and said to have come from Akhmim, Egypt. These curtains appear as exhibit no. 112 in the exhibition catalogue, and are described in this as having 'been preserved in Egypt through their use as burial wrappings.' Surrey physician **Dr. Michael Straiton**, who gave a memorable lecture to the BSTS back in 1989 happened to visit the exhibition last Boxing Day, and his attention was drawn to strong shadowy-brown imprints where the curtains seemed to have been in contact with the dead body which they enshrouded. He wrote while the exhibition was still in progress:

The marks are uncannily like the Turin Shroud marks in their vague ghostly appearance on ancient linen. One cannot see the whole exhibit as it is too long to show and has been folded so as to cover some of the lower part. The curtains are elaborately embroidered.

Centrally in the upper portion is a Greek cross in a garland held by a pair of Nike [winged victory] flying figures. The body had been placed on the cloth with the head next to the cross, as one would expect. There are four images ... The impression I got was that the right-hand curtain had been folded so that the body lay on image 3 [*see photo on previous page*] with 4 underneath. The left side cloth had been placed over the body after folding, with the vague image 1 uppermost. The fact that this is undoubtedly a burial cloth bearing identifiable frontal and dorsal images of a dead body explodes the idea that the Turin Shroud could not possibly be the image of a crucified corpse - that it must be a 'fake' as the Press concluded at the time of the carbon dating.

[Editor's note: At Dr. Straiton's suggestion I independently visited the Exhibition to examine the curtains, and a photograph of them full-length, as reproduced in the Exhibition Catalogue appears on the previous page. From both the photograph and from personal observation, there can be no reasonable doubt that the stains do indeed derive from the body that the curtains were used to enshroud. However, with due respect to Dr. Straiton they seem altogether different in character from the Turin Shroud, and indeed from the Jospice Mattress imprint which came to light a few years ago. They lack any photographic quality and seem simply to derive from post-mortem fluids emanating from a body that, because it was postpharaonic, had not undergone formal mummification.]

#### **From Rome:**

#### ***Vatican English Language Journal Calls for Open Mindedness and Fresh Studies on the Shroud***

Inside the Vatican is a superbly produced colour journal published ten times a year by Urbi et Orbi Communications of 3050 Gap Knob Road, Kentucky, 40052, U. S.A. The Editor is **Robert Moynihan**, and included in the March issue [see cover right] is a magnificent 16 page Photo Essay on the Shroud, full of colourful photographs, and accompanied by articles by **Professor Emanuela Marinelli** and **Dr. Orazio Petrosillo** of Rome's Shroud group Collegamento Pro Sindone. In his Editorial, Robert Moynihan outlined why he had chosen the theme of the Shroud for the Journal's March issue:

We chose to do so in part because it is the season of Good Friday and Easter Sunday, and we thought the Shroud might provide material for reflection during this special time in the Church year. We do not insist on the Shroud's authenticity as a matter of faith, but we do insist that the question of its date remains open despite the Carbon-14 dating of 1988. We would hope the Vatican, together with disinterested scientists, might agree to once again study the Shroud and respond to the arguments of those who believe the dating was wrong. We feel the early reports from Edessa and Constantinople of the existence of a long cloth which bore the image of Jesus on it are evidence that some kind of Shroud was revered long before the 1260-1390 window set by the Carbon-14 dating. We feel that the Turin Shroud is so mysterious, so fascinating, so moving, that it demands further study. We think such study should be undertaken calmly and patiently, but we would also be pleased to see the new studies undertaken prior to the year 2000 since the Incarnation.

Clearly these are sentiments with which many members of the British Society for the Turin Shroud will find both common ground, and cause for encouragement.

It is also rewarding to have a professional translation into English of Professor Emanuela Marinelli's review in *Inside the Vatican* of the current state of knowledge on the Shroud. This is as follows:

***Latest Findings***  
**by Emanuela Marinelli**

The Shroud of Turin continues to fascinate and astonish us. New discoveries and theories are front-page news. Here it is worth noting some of the more valid recent experiments.

French biophysicist Jean-Baptiste Rinaudo, a researcher in nuclear medicine in Montpellier. This scientist offers as a possible explanation for the acid oxidation of the Shroud's surface fibres in the area where the image was formed, the three-dimensional data contained in the figure, and the vertical projection of all the image marks: an irradiation of protons released by the body, under the effect of some unknown source of energy.

Experiments conducted on linen cloth have produced results comparable to the Shroud. It is interesting to note that successive artificial ageing of the cloth samples reinforces the colouring of the oxidized fibres. Rinaudo maintains that the atoms involved in this process are those of the deuterium molecule, present in the organic material: this is the element which requires the least energy for the extraction of a proton from its nucleus, formed by a proton and a neutron. It is a stable nucleus, which requires an energy input to break it.

Thus, the protons produced in the process could have formed the image, while the neutrons irradiated the tissue with a consequent increase in C 14, thus confusing and falsifying the dating of the Shroud.

Of great significance is another set of experiments carried out by the Russian scientist, **Dmitri Kouznetsov**, recipient of the Lenin Prize for Science, and director of the E.A. Sedov Biopolymer Research Laboratories in Moscow. Kouznetsov obtained a piece of linen cloth from the En Gedi area of Israel which had been dated to around the time of Christ. (The sample was provided by the researcher **Mario Moroni** with permission of the Israeli Antiquities Authority of Jerusalem). C14 examination at laboratories in Tucson (Arizona), Toronto (Canada), and Moscow subsequently and separately verified the date to 200 A.D.

The cloth was subjected to conditions similar to those in the Chambéry fire of 1532, which engulfed the church where the Shroud was kept: high temperatures in a closed area with the presence of silver, Silver (which dripped onto the folded Shroud [in 1532]) in fact, acts as a catalyst for carboxylation of the cellulose, so that subsequently the cloth becomes enriched with carbon. After Kouznetsov's experiment, the cloth underwent another C 14 examination, with subsequent dating to fourteen centuries later!

The "rejuvenating" effect of silver seems to be confirmed by certain archaeological excavations in Pompeii, where textiles, and particularly linen, were found in the ruins of the volcanic eruption of 79 BC. These apparently suffered different rates of combustion according to the sites at which they were discovered: materials which burned in the close vicinity of silver objects appear, even to the naked eye, much "younger," that is, they seem to have had a slower process of decay.

Another discovery has been announced in the United States. **Leoncio Garza-Valdes**, a researcher at the Institute of Microbiology at the University of San Antonio, Texas, claims to have identified upon the Shroud the presence of *lichenothelia*, a biological composite of fungus and bacteria. This, says Garza-Valdes, covers the Shroud's threads with a thin coating and is not removable by cleaning processes. Such a mold could have caused inaccuracies in the carbon dating.

Concerning the blood present on the Shroud, **Jerome Lejeune**, Nobel Prize in the field of genetics, had initiated, before his unfortunate death last spring, a research project aiming for the genetic demonstration of a molecule of human haemoglobin on the Shroud. Meanwhile, Lejeune had already identified and analyzed some red blood cells he affirmed to be human blood, thus confirming the conclusions reached in 1981 by **Pier Luigi Baima Bollone**, medical examiner at the University of Turin. Lejeune had also planned to study the ageing of the protein molecules by means of racemization.

Other scientists are working on DNA tests on the Shroud. In Genoa analyses promoted by Baima Bollone are continuing. While from Strasbourg there is news of isolated genes of both chromosome X and Y, confirmation that this was masculine blood. **Victor Tryon**, from the University of San Antonio, Texas, announced the same results, from his experiments with blood from the occipital (skull) area. From the same sample, Garza-Valdes affirms discovery of a camel's hair [textile scrap], probably left from a head-band.

Even the historical field is contributing interesting findings on the Shroud. **Gino Zaninotto**, a Greek and Latin instructor in Rome, has discovered a tenth-century document which throws some light on the dark centuries of the Shroud's "disappearance" in Turkey. This manuscript, the *Codex Vossianus Latinus Q 69*, mentions an eighth-century Syrian report that Jesus had left an imprint of his whole body on a cloth which was preserved in the church of Edessa, Turkey - an unmistakable reference to the Shroud.

Zaninotto also stresses that a passage from the Acts of St. John (cited in the so-called Cyprian Manuscripts of the third- fourth centuries), in which Jesus says: "You will see me as if reflected in water or in a mirror."

And this is how we contemplate the Crucified Christ in the Shroud of Turin.

***False Inferences*** [Emanuela Marinelli's article continued]

Not all the new theories concerning the Shroud are worthy of credulity - or attention.

From the United States, two University of Tennessee professors, **Emily A. Craig** and **Randall R Bresee**, affirm that the Shroud image could be caused by using a powder pigment, spread with a brush or the flat side of a wooden spoon.

The Shroud of Turin Research Project (STURP) scientists, who examined the Shroud with the most advanced method and instruments, excluded the presence of paint or any type of pigment upon the Shroud; and thus the Craig-Bresee theory is inconceivable as an explanation. Furthermore, it is often noted that the Shroud image is not recognized as belonging to any definite artistic style or period; no artist could have achieved such a work, in any period of history.

Nevertheless, two English researchers, **Clive Prince** and **Lynn Picknett**, have been claiming that the Shroud was the work of Leonardo da Vinci. That is truly absurd, since we know the Shroud was given to the Savoy family on March 22, 1453, when Leonardo was still in the cradle. Furthermore, the cloth with its famous image, had already been in circulation in France for over a century.

In Germany, a young theology student at the University of Freiburg, **Holger Kersten** upholds the authenticity of the Shroud, but insists that Jesus did not die on the cross. Jesus was only drugged, he says; when taken down from the cross he was revived and cured by Joseph of Arimathea and Nicodemus, who rubbed him with myrrh and aloe. The C 14 "plot," Kersten asserts, provided the Church with a useful cover-up for the embarrassing truth.

The blood stains on the Shroud, Kersten insists, could only be left by a beating heart. And, he continues, there are traces of the ointments "partially vaporized by a warm body, completely lacking the signs of *rigor mortis*." "I personally carried out a reconstruction of this process, covering myself with such substances" Kersten asserts in his report, "and the marks left on my linen were amazingly similar to those of the Turin Shroud."

I guess we might ask Kersten, why he tried out only the "ointment" process, rather than undergoing the sufferings of the Man of the Shroud (120 lashes of the terrible *flagrum romano*, coronation with a cap of sharp thorns, crucifixion with nails at the wrists and feet, piercing by a lance in the right side between the fifth and sixth ribs) - and then try the cure!

How can anyone deny that the Shroud contained a corpse, the body of a dead man? The sign of *post mortem* blood and already-separated serum from the crucified man's side are unequivocal proof. And then there are the feet, with the converging toes, a clear sign of the *rigor mortis* which had blocked the lower limbs during the crucifixion. Finally, the complete immobility of the body, with no sign of the slightest shifting or displacement, either in the imprinted image or the coagulated blood, is indisputable.

In fact, the bloodstains on the Shroud could not possibly have been left after the body was placed on the cloth: the streamlets of blood traced on the Shroud attest to the vertical position of the body, wounded *intra vitam*. If the blood had come from a supine body covered by a cloth, the effect would have been rounded droplets of blood formed around the wounds as the sheet was progressively soaked through.

The blood, already congealed when the body was on the cross, liquified again by a gradual process of *fibrinolysis*, in contact with the myrrh- and aloe-soaked cloth. This procedure probably lasted about thirty to thirty-six hours, after which the body-sheet contact was interrupted, without the slightest evidence of lateral shifting.

It is not conceivable that Kersten, or anyone else, could remain thirty to thirty-six hours, completely immobile with feet curved inwards, wrapped up in a myrrh and aloe drenched sheet - even without all the painful wounds demonstrated by the Shroud.

### **From Belgium:**

#### ***Shroud Researcher injured in Hotel Fire***

On New Year's Eve Shroud researcher **Remi Van Haelst**, of Antwerp, Belgium was with his wife at Antwerp's Switel Hotel when fire broke out in the building. The couple only narrowly escaped with their lives. Remi was unconscious for a week and although now out of hospital, he has several months convalescence still to run. He writes:

The accident did not stop my Shroud research. I am in correspondence with Dr. Van de Merwe of the Universities of Harvard and Cape Town. He uses radiocarbon dating techniques in his work and has published many papers in scientific journals, including *Nature*. He uses the variations in delta carbon 13 to help his work on prehistoric diets. According to orthodox opinion among radiocarbon dating specialists, the proportion of carbon 13 is constant, influenced only by fractionation and by photosynthesis. But according to Dr. Van de Merwe, delta carbon 13 can also be influenced by diet, and probably by other undetermined factors. He also found significant differences in delta carbon 13 in the collagen and apatite (calcium phosphate and fluoride) present in bone. This indicates that Dr. Kouznetsov was right when he reported large variations in delta carbon 13 in the five components of flax.

Remi van Haelst has provided a very technical paper detailing these findings. This has not been reproduced here because of its difficult language and highly specialist nature, but a free copy can be obtained from the Editor on submission of an S.A.E.