

Excerpts on C-14 testing preparation from “Bringing the Shroud to the Test” by David Sox, in Face to Face With the Turin Shroud, Peter Jennings, ed. (Oxford: Mayhew-McCrimmon, Ltd), 1978, pp. 41-56, excerpts taken from pp. 45-55.

By 1973 there were eleven official members of the Commission appointed by the Archbishop. All of them were Italian, except Professor Raes. This restriction meant that they would only be able to go “so far” in their studies, because of the limitation of the scientific equipment at their disposal. Professor Silvio Curto, who is curator of Turin's impressive Egyptian Museum, noted that the fabric is not like the ancient Egyptian plain weaving; it is a “twill”, a herringbone pattern probably originating in Syria or Mesopotamia. Professor Raes of Ghent, who is acquainted with almost every conceivable ancient and modern fabric, asserted that in his opinion it was *possible* that the linen was of the time of Christ. He discovered the presence of cotton in the sample from the main body of the Shroud. The other sample was from the side strip which may or may not have been an integral part of the original Cloth. The fibres he saw corresponded to the species *Gossypium Herbaceum*, which is the cotton of the Middle East. This added a certain interesting touch to the discovery of the fabric, in that cotton is not grown in Europe, and the Mishnah clearly allows the mixing of flax and cotton (not so with wool, which still is a transgression of the 'mixing of kinds' to Orthodox Jews.) Ironically the samples he studied provided more material than was necessary for carbon dating by newly improved methods, but this information was apparently unknown to the Commission members who opposed the test, assuming that it would require a handkerchief-size sample, as was the case with the original Libby test [...].

[...] Despite considerable limitations, it was evident that Cardinal Pellegrino's Commission [which had done some analysis in 1969 and 1973] had started a process which was now irreversible for the future study of the relic. The reliquary had been opened to direct scientific analysis which would ask more and more questions. As Father Rinaldi put it: “Even if Turin botched this first positive step by limiting the work of the Commission and surrounding it with uncalled-for secrecy, it was a breakthrough of a sort.” The Turin Commission was not aware that the two samples removed from the Shroud for Professor Raes' study could be used for carbon 14 dating. Improvements in both equipment and techniques by several North American laboratories had narrowed the required sample weight from approximately 40 grams in 1950, to about 60 milligrams in 1976. Even the smaller of the two samples removed was above this new range and several individuals interested in the test possibility in England and America were aware of this fact. During a visit to Turin in July 1976, I decided to find out where those samples were. With friends in England, I was convinced that the carbon dating test was the single most important trial for the relic, certainly the one most mentioned by those taking a scientific interest in the Shroud. Monsignor Cottino, still acting as Cardinal Pellegrino's spokesman on matters related to the Shroud, was certain that the samples were back in the reliquary of the Royal Chapel in Turin Cathedral. Others said that they had been destroyed, but Professor Curto assured me they were still in Ghent with Professor Raes, and so they were. A letter from him confirmed the fact. Expressing an interest in the new carbon dating, he ended his correspondence with one sentence which whetted our hopes: 'I should like to know how to proceed for the forwarding of the samples.' By chance, Dr Walter McCrone, a microanalyst from

Chicago, who was interested in various tests with the Shroud including the carbon dating, was in London at the time of the correspondence. Dr McCrone is best known for his testing of Yale University's Vinland Map, which, to the horror of Italo-Americans, might have indicated a pre-Columbian mapping of the New World. He discovered that, while the map's parchment was indeed medieval, the ink contained a synthesised pigment unknown until 1920. Professor Raes produced the samples for Dr McCrone and me in his Ghent flat on 19, September 1976. They were kept in what looked like an old scrapbook for postage stamps. Dr McCrone was able to give them a preliminary investigation with his portable set of microscopes and other instruments and his initial reaction was that they were suitable for testing. Unknown to us, Professor Raes had been in touch with a carbon 14 specialist from the University of Louvain-La-Neuve, Professor D. Apers, who was interested in the new test possibility but not as proposed by Dr McCrone. The method Professor McCrone was suggesting at this time was using "nuclear track emulsions" which Professor Apers stated bluntly was not acceptable to the carbon dating experts he knew. Professor Raes became nervous over the fact that he still possessed such valuable samples. They had been in his care for three years and I had asked him during this meeting to get in contact with Turin over the possibility of a test. Members of the Commission reacted by asking for the samples to be returned, which he did - by post! They were then placed in the sacristy vault of the Royal Chapel where they were to stay. When interviewed by *The Sunday Times* as part of a "Spectrum" article "Is this the face of Jesus?" published on 10, April 1977, Monsignor Pietro Caramello, the custodian of the Royal Chapel, said that no pieces were ever cut from the relic, "and we exclude ever doing so". In a letter to the editor, published the following Sunday, I not only gave the pages (79-83) and photograph references to these samples in the Turin Commission Report (over which Monsignor Caramello presided) but also indicated that I had seen them in Ghent and that the Shroud's legal owner, ex-King Umberto II, had expressed a keen interest in the possible testing when I had been with him in Portugal the previous week [...].

[...] It was apparent to all involved with the New Mexico Conference [*a conference that the Shroud of Turin Research Project (STURP) had held in 1977, the year before their hands-on testing of the Shroud in 1978*] that studies had gone about as far as possible using information gleaned from photographs. It was also recognised that the Turin tests had raised questions which needed direct exploration. The possibilities of future tests and direct observations of the Shroud were so many and so varied that their proposals might have the opposite effect of what had happened in Turin - involving too many people and too varied a personnel. It was, of course, all conjecture; just how much would Turin be willing to accept? Carbon dating was put at the top of the list of proposals and Conference participant, Dr Walter McCrone, was viewed as the best-suited person to oversee this possibility. He has no carbon dating facility at his Chicago laboratory but he is in touch with all the centres perfecting the new C-14 test. What Dr McCrone does possess is two million dollars' worth of the most sophisticated microscopes and microprobes in the world. One of his prized instruments is the ion microprobe which is able to identify which of the 104 chemical elements are present in a particular sample. In view of the nature of the image as reported in the Turin Commission Report, this was viewed as a top priority [...].

[...] While the Archbishop began quietly to assess the situation, two of the participants of the New Mexico Conference, Monsignor Giulio Ricci and his secretary, Miss Mary Elizabeth Patrizzi, made independent efforts to get the Shroud carbon dated. Monsignor Ricci has been archivist at the Vatican for the Congregation of Bishops and has had a long interest in the relic.

He has made endless mathematical calculations of the dimensions of the Shroud's image and has developed a complicated theory as to how the linen wrapped the body. Probably no man alive knows more about each marking on the Cloth. The New Mexico meeting had given him and his secretary the impression that they should pursue 'diplomatic' overtures for the carbon test and they did. Their efforts were basically unknown to others who were trying to get the test proposals accepted.

On 21, September 1977, following the meeting in Turin, Monsignor Ricci, Miss Patrizzi and Dr McCrone met ex-King Umberto in Geneva to discuss the carbon dating test. A phone call by Miss Patrizzi to Monsignor Caramello in Turin ascertained that the samples were still in the sacristy safe, and Monsignor Ricci's secretary stated that the ex-King was authorising their release for testing. Monsignor Caramello wanted more than a 'phone call as assurance of the ex-King's desire, and when the implications of Shroud carbon dated. Monsignor Ricci has been archivist at the Vatican for the Congregation of Bishops and has had a long interest in the relic. Monsignor Caramello wanted more than a phone call as assurance of the ex-King's desire, and when the implications of this attempt were realised in Turin a set-back to the possible test was the result.

Monsignor Ricci had gone a step further. It had always been thought that samples similar to the Turin Shroud should be tested before the crucial test itself. He was able to obtain samples of the relic, "El Santo Sudario", from the Oviedo Cathedral in Spain. This image, little known outside the area of Oviedo, is a stained piece of linen which has been revered as a kind of pillow for the head of Jesus in the tomb. Dr McCrone prepared the two removed samples as he would do for the hoped-for Turin Shroud material. After the micro-analysis of the material by the sophisticated equipment in his Chicago facilities, a portion was made ready for carbon dating by Dr McCrone's preferred C-14 centre, the Lawrence Berkeley Laboratory in California. His analysis did not reveal anything noteworthy about this particular relic, and Lawrence Berkeley was unable to perform the carbon dating at this time because of a fault in their accelerator equipment.

Another set-back to having the carbon dating of the Shroud at an early stage was the interpretation of the results of an electron scanning of a thread of the Shroud taken by Princess Clotilde, when the backing was repaired in 1868. Professor Luigi Baima Bollone of Turin discovered a large amount of organic fungi (mould and mildew) on the examined thread which led him and others to worry that the same might be true of any samples of the Shroud. These fungi would, of course, contain carbon which, he thought, would preclude the possibility of obtaining a correct date for the relic. What Professor Bollone did not realise was that ultrasonic washing, followed by a purification of the cellulose of the prepared samples for C-14 testing, would remove all non-linen components [...].

[...] Nothing was known of the fate of the 'New Mexico proposals' until 24, April 1978, when a communication issued from the Scientific Commission of the International Centre for Sindonology. This was the finalised version to be placed before the Archbishop. That he would accept was a foregone conclusion, but one item in the report was indefinitely postponed, namely, carbon dating, because the members of the Commission did not have "... a consensus among the experts on the 100% efficacy of the test in the specific case of the Shroud". Most of the New Mexico proposals were accepted but it was the absence of the C-14 tests which created the most attention. What especially worried those of us asking for carbon dating was the fact that the Congress came at the end of the exposition and, if new samples might be needed in addition to those already removed (especially since one was from the sidestrip of the Cloth), the time of the

Congress would be too late, since the relic would be returned to the reliquary. The whole procedure of obtaining the necessary material for the test would have to begin again. With this in mind, I released the Turin communication to *The Times*, thinking that at least a brief mention of the situation might create a stimulus for the increasing number of people in Britain who were taking an interest in the Shroud's testing. *The Times* put the story "Carbon 14 test rejected for Shroud", on the front page of its issue on 9 May 1978. Two days later, Professor Harry Gove of the University of Rochester telephoned to say that his facilities were in a position to consider operating their new C-14 test as early as August 1978. Rochester is one of three North American laboratories using the new accelerator technique. The effort there has been a joint project with the University of Toronto and the General Ionex Corporation of Massachusetts [...].