The Shroud and the great flop of medieval dating, the word to scholars

The Shroud Emanuela Marinelli takes us to know the truth

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That the Shroud is difficult to date and define is no secret to anyone.
But there was an examination in particular in 1988 that seemed to prevail over the others: the radiocarbon examination. Today, however, it is increasingly clear that this exam was wrong. Acistampa spoke about it with Emanuela Marinelli, a sindonologist and author of many books on the various Shroud studies. In May in Catania, in a passionate conference, She presented the latest news on that date which today is considered incorrect.

Professor Marinelli, do you want to explain what the exam is and how it was carried out?

The test uses the existence in nature of small amounts of radioactive carbon, 14 C, which combines with oxygen to form radioactive carbon dioxide. This is assimilated by the plants and ends accordingly in animals and men.

14 C decays with time; the death of the living being ceases the assimilation of 14 C again and only decay continues. More time passes and less 14 C remains in the remains of the organism. By measuring the residual 14 C a radiocarbon age is attributed in proportion.

However, if the sample is contaminated by another 14 C of various origins, this also ends up in the count; the object is thus more radioactive and therefore, for dating purposes, "younger". Scientists are therefore very cautious in evaluating the results of the analyses conducted with the 14 C method, because some contaminations cannot be eliminated with the normal sample cleaning methods. The scientific literature contains sensational cases of incorrect radiocarbon dating.

The analysis of the Shroud, carried out in 1988 with the radiocarbon method, had a wide resonance because the result placed the origin of the relic between 1260 and 1390 AD.

The samples for the test were taken after years of discussions and contrasts between the bodies concerned and interested. In the end, three laboratories were chosen, those of the University of Tucson (Arizona), the University of Oxford and the Federal Institute of Technology in Zurich. All three used the new method of the Tandem accelerator, still little tested on fabrics.

The samples were taken on April 21st 1988. The textile experts present agreed that the cut would take place in the left corner of the frontal image. The samples were delivered to the representatives of the laboratories, who were present. A long wait began which lasted for six months. In this period there were violations of the obligation of confidentiality and leaks, which caused a sensation in the English newspapers.

The agreements that were taken in January 1988 in London were completely disregarded. The laboratories not only did not complete the measures in the three months provided and did not maintain confidentiality, but did not even send the data to the "Colonnetti" Institute in Turin for statistical analysis. The representatives of the laboratories did not meet in Turin, as was expected, for the preparation of a scientific communication and to publicize the results to the Custodian, Cardinal Anastasio Ballestrero,

who was informed by the physicist Michael Tite, director of the research laboratory of the British Museum and research coordinator, with a letter delivered by hand on 28 September.

The announcement of the result was made in Turin by Cardinal Ballestrero on the morning of October 13, 1988. On the afternoon of the same day Tite and representatives of the Oxford laboratory held a press conference in London. Behind them stood a blackboard, on which the date was written followed by an exclamation point.

What are the doubts on that exam?

Many scholars were **against submitting the Shroud to the dating with the 14 C method**, due to the peculiarity of the find, which has gone through a thousand vicissitudes and is contaminated by many substances. Mold, fungal hyphae, candle smoke, sweat, fire, water, contact with more recent fabrics, restorations, may have significantly altered the linen, compromising the validity of the radiocarbon examination. Furthermore, the angle from which the sample was taken was one of the most manipulated parts during the exhibitions.

The silver reliquary containing the Shroud was enveloped in flames in the fire of December 4, 1532 in Chambéry; the high temperature in a closed environment can provoke exchange of isotopes that lead to an enrichment of radioactive carbon, making the fabric proportionally "younger". The reaction is favored by the presence of silver.

Some bacteria operating on the surface of the linen can, through their enzymatic activity, chemically bind alkyl groups to cellulose. These groups contain carbon derived from the local environment. Even if bacteria are removed by cleaning, cellulose changes remain. **It should be emphasized that the transformation of linen due to fire and microbial action is chemical and not physical:** therefore the solvents and cleaning techniques used by the radiological laboratories, which remove physical contamination, such as dirt, they do not remove the carbon-containing groups that have been added, because these groups form chemical bonds directly with the molecules of the cellulose itself.

Leoncio Garza Valdés, researcher at the Institute of Microbiology of the University of San Antonio (Texas), stated that he had identified on some threads of the Shroud the presence of a biological complex composed of fungi and bacteria that covers the threads like a patina and cannot be eliminated with normal cleaning treatments. **Therefore, it would have distorted the radiocarbon dating.**

Interesting analyses, the results of which were published in the prestigious ***Thermochimica Acta*** journal **in 2005, were conducted by the American chemist Raymond N. Rogers,** who found encrustations of dyes and cotton fibrils in linen coming from the sampling area for analysis radiocarbon, an indication of an invisible mend that has invalidated the validity of this test.

Already in 1982 a thread of the Shroud from that area was dated with the radiocarbon method at the University of California. One half of the thread appeared to be covered with starch. The wire was divided in half: the non-starched part was dated 200 AD, while the starched part gave a date of 1000 AD.

She immediately pointed out that there were errors...

The chronicle of the whole affair and the doubts of the scientific community were gathered in a book, the first to come out after the announcement of the results of the dating. I wrote that text with a great journalist, **Orazio Petrosillo, the Vatican correspondent for *Il Messaggero***, who unfortunately

passed away prematurely. The volume, published by Rizzoli in 1990, had the prestigious preface by the writer Vittorio Messori . It is now sold out, but an updated summary can be found online.

End of the first part.