The "Shroud": new investigations disavow the radiocarbon results

Shroud: radiocarbon disqualified

The radiocarbon test applied to the Shroud in 1988 gave a surprising result: the famous sheet kept in Turin, which tradition attributes to the burial of Christ, dates back to the Middle Ages. The results of that analysis were published in the prestigious journal *Nature* [1] and the Sacred Linen was downgraded from an authentic relic to a work of art.

The academic world, however, has not remained silent in front of that verdict and over the years various scientific publications have provided chemical, physical, biological and statistical **evidence** contrary to the validity of that examination, conducted on a polluted and mended marginal strip. In particular, the statistical calculations, applied by M. Riani, AC Atkinson, G. Fanti and F. Crosilla [2] to the data published in *Nature*, revealed that these data show "a surprising heterogeneity" which strongly questions them.

The results from the statistical analysis of the raw data, i.e. the data derived from the single measurements of 1988, were published in an important article, which I wrote together with **Tristan Casabianca, Giuseppe Pernagallo** and **Benedetto Torrisi**, which appeared in *Archaeometry* [3] in 2019.

This statistical analysis definitively demonstrates that the samples examined were not homogeneous, therefore they cannot be considered representative of the entire sheet. The result of that test, therefore, does not allow us to consider the medieval Shroud, as it was stated in 1988. I talked about it extensively on *AboutArtOnline* [4] . The news was also spread by the International Center for Studies on the Shroud [5] of Turin.

Recently, two other scientific articles [6] **have been published by P. Di Lazzaro, AC Atkinson, P. Iacomussi, M. Riani, M. Ricci and P. Wadhams** that deny the validity of the radiocarbon test conducted on the Shroud in 1988. In a press release [7], released by *the International Center for Studies on the Shroud* of Turin last 8 September, the conclusions are summarized in five points:

1) **The dating of the small pieces of linen into which the samples taken in 1988 were divided provide non-homogeneous results**, as if the samples came from fabrics of slightly different ages.

2) **The age of the individual pieces systematically depends on their position within the fabric.** This linear and systematic relationship between apparent age and location is anomalous and unexpected.

3) **Due to the anomalies it makes no sense to calculate the average age and that calculated by the laboratories of Oxford,** Zurich and Arizona loses its meaning.

4) **Two possible reasons for the inhomogeneity of the datings have been identified:** the first is an incomplete cleaning of the samples, the second is the possible presence of fabric additions due to repairs.

5) **Finally, a series of measurements was proposed on samples from the Shroud already available,** so as not to take material from the Shroud cloth. These measures would make it possible to create an operational protocol and to establish whether and what contamination may have produced the non-homogeneity of the results. These analyzes could be essential for assessing the significance and reliability of a new dating of the Shroud through the radiocarbon technique.

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