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A SUGGESTIVE HYPOTHESIS COVERING THE RADIODATING RESULTS OF THE SUDARIUM OF OVIEDO AND THE SHROUD OF TURIN

Abstract

The paper summarizes the historical information known by tradition, which indicate the Sudarium kept in Oviedo as one of the funerary cloths used for the burial of the Lord Jesus.

Then we reviewed the experimental results obtained till now which make more and more stronger the hypothesis that the Sudarium of Oviedo and the Shroud of Turin are coeval cloths.

After this introduction, we took into consideration the analyses of the ^{14}C content carried out on samples of the Sudarium, its backing cloth, and on a linen cloth taken from a mummy of the II century BC.

After having demonstrated that the historical dates obtained for the Sudarium and its backing cloth permit to reject an isotopic interaction between the two cloths, we examined the results of the radiocarbon analyses performed on the mummy linen. They are four measurements respectively referred to the linen sample: "as received", the same cloth after a thermal treatment, after an irradiation of neutrons, and then after an irradiation of neutrons followed by a thermal treatment.

The integrated amount of the flux of neutrons was such to produce a less intense coloring than that found on the Shroud, while the thermal treatment consisted in a pyrolysis that simulated, in a first approximation, the fire of Chambéry experienced by the Shroud in 1532.

Among the most important results obtained, it is noticeable a significant enrichment in the ^{14}C content after irradiation (360 years approx. - minimum value obtainable after cleaning treatments more intense than the standard ones) and a more remarkable enrichment (further 760 years) when the irradiation is followed by a thermal treatment.

On the basis of these results, the historical ages obtained by the radiocarbon analyses carried out on the Sudarium of Oviedo and the Shroud of Turin could reasonably be interpreted as an enrichment in the ^{14}C content produced by the exposure to an irradiation in which, according to a more recent hypothesis, both the two holy relics could have been involved, and by a further thermal treatment (the fire of Chambéry) which occurred only to the Shroud of Turin.