Letters

The Mystery of the Shroud

I read with great interest and pleasure the article "The mystery of the Shroud of Turin challenges 20th-century science" (News and Comment, 21 July, p. 235).

It is noted in particular that the image includes a front and back view, was probably produced by scorch marks on the cloth (but is of a man with a beard and hair that were apparently undamaged), and that it possesses a three-dimensional quality according to computer analysis. Now, how could a group of enterprising gentlemen with limited means produce such an item in Medieval Europe?

Around the time of the 14th century, Western Europe was deep in the flowering of Gothic art, and a good quantity of excellent religious statues were being created, most of them in stone, to grace the cathedrals then under construction. I speculate, Can the perpetrators possibly have borrowed an appropriate stone or even metal life-sized statue of Jesus and heated it in, say, one of those big bread ovens that abound in Bruegel paintings? And then, with the hot statue on its side, carefully pressed or tented a linen shroud, perhaps dampened, and thus generated those scorch marks now visible on the famous article? Features in higher relief or deeply carved, such as nose, beard, and hair, would scorch more darkly and produce the negative image we now see. Middle Eastern linen could easily have been obtained from Crusaders, who were still returning to Europe at that time. It would be interesting to see if a synthetic shroud could be produced by this means.

Should the shroud have indeed been made by this method, there is some irony here. The perpetrators invented photography. And the world's first photograph is a scorch-o-type!

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I see no need to invoke supernatural intervention or even medieval chicanery to explain the image on the so-called "Shroud of Turin." All that is needed is a hot statue and a piece of cellulosic cloth to wrap it in. If times and temperatures are appropriate (a whole spectrum would be operable, as everyone knows who has ever ironed linen handkerchiefs), the cloth will acquire surface scorch marks in a negative three-dimensional image of the statue.

I suggest that, sometime before 1350, there occurred a fire, probably in a church or monastery in the Holy Land, that a metal, ceramic, or stone statue of the crucified Christ became hot and was quickly wrapped in linen to protect it. Conceivably, the statue was spattered with drops of molten lead, perhaps from a nearby stained glass window, thus generating the "drops of blood."

I do not speculate on the subsequent history of the resultant image.

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Barbara J. Culliton's intriguing article on the mystery of the Shroud of Turin prompts us to suggest a mechanism by which the image of a body might have been formed on cloth in which it was wrapped.

Let us assume that the entire body (including the hair and the "coins" which covered the eyes) was coated before enshroudment with a substance containing vegetable oils. Contact of the body with the cloth obviously would have transferred oil to the latter, while capillary flow and volatilization of some components in the oil could have created a graded effect, varying with the proximity of body parts and cloth.

Subsequent autoxidation of unsaturated and other labile oil components, which occurs over a period of months or years at mild temperatures, could have resulted in the formation of a brown pigment. Such a pigment would probably have been resistant to further oxidation (for instance, during the cathedral fire mentioned in the article). Of course, pigment formation might have been greatly affected by the presence of spices or dyes in the ointment.

This hypothesis requires that oil transfer was not sufficient to have saturated regions of the cloth, or loss of detail would have resulted from smearing, diffusion, and redeposition when the shroud was moved or stored following removal from the body. Saturation of regions would also have led to lost detail due to excessive contrast, much as when a photographic emulsion is overexposed.

These considerations suggest that a lightly oiled body, in contact with the shroud for a brief period of time, could have produced the observed image.

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Is it ruled out that the Shroud of Turin could have resulted from a lightning strike of a shallow grave, perhaps via a tree or grave-marking cross?

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The article on the Shroud of Turin raises many intriguing questions. There exists a very important piece of information, however, that could create problems about the authenticity of the shroud. In the Gospel according to John 20:6–9, the scene inside the tomb is described as if there were *several* linen wrappings and a *napkin* which covered Christ's head, as was the customary manner of wrapping dead bodies at that time. How can one reduce these separate wrappings into a single shroud?

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Science has sunk to a new low with the publication of the article on the shroud of Turin. While there is nothing unique in the application of high technology to questions of marginal scientific value, the sectarian orientation of the article is rather unusual. I anxiously await further articles following the same principles. If you are at a loss for appropriate subjects, may I offer the following list, gratis.

1) Neutron activation analysis of dust in the attic of the Prague synagogue left behind by the golem.

2) Digital computer simulation of I Ch'ing or astrological forecasting of the U.S. economy.

3) Data processing techniques to speed the enumeration of the names of god (with due credit to A. C. Clarke).

4) Double-blind study of miracle cures at Lourdes.

5) Computer-synthesized versus human voices in promotion of plant growth.

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