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Unfolding the Shroud



■ The Codex of Pray, third panel.

Two other depictions of Christ's burial cloth—one at Lier, another at Pray—strongly support the authenticity of the Shroud of Turin

By JÉRÔME LEJEUNE

Along with the bodily images—which are surely the most important—the Shroud of Turin also bears the traces of an ancient fire, which reveal a great deal about the cloth's history.

During the fire that ripped through Sainte Chapelle de Chambéry, molten silver dropped onto the box that contained the folded Shroud of Turin,

causing enormous damage which the Poor Clares did an admirable job to repair. In the places where the cloth had been charred, they laid down pieces of altar cloth. That process left the remaining material singed but intact, showing the remains of the soot which had been drawn off by the water thrown upon the burning cloth. Thus repaired, the Shroud was then hand-sewn onto a backing of fine Dutch linen, where it remains to this day.

The existing patches and piecework on the Shroud make it possible to reconstruct the accident precisely. The central line of the Shroud remains, bearing a human image—front and back, lacking only shoulders and upper arms. On each side of that central line, there is a series of symmetrical traces running down the length of the cloth, and each horizontal line created by folding is itself surrounded by a symmetrical scar of charred cloth.

Before being placed in the box, then, the Shroud was first folded in half lengthwise, right over left; then in quarters, again with the folds placed right over left along the longer axis. Then the long cloth was folded in half—front over back—and in half again.

In this condition one can easily confirm that the repairs, the burns, and the stains line up exactly. One more fold—this time into three sections, with the end folded into the middle—produces a configuration in which all the damages are precisely superimposed upon each other, with the worst ravages on the top and the lesser damage on the bottom.

This method of folding the Shroud into 48 parts—the only arrangement compatible with the repairs done by the Poor Clares—reveals the evidence of another type of burns, considerably smaller, which occurs *precisely in the areas which were repaired*.

A second fire?

These marks appear on both sides of the cloth, with the marks on the side which carries the facial image corresponding to those on the back image. They constitute three small holes, aligned along the long axis of the Shroud and then along the folds in which the cloth was wrapped. Another hole is located toward the exterior, so that the four holes together form the shape of the letter "L."

These holes are notably larger (and accompanied by smaller surrounding holes) on the dorsal side of the Shroud, and the marks on the left are more clear than those on the right. On the side of the cloth that carries the facial image the marks are less notable, but those on the right are more important than those on

the left. The fourth hole, for example, is barely discernible on the facial left side.

Here too, the folds of the Shroud allow us to reconstruct the situation. The cloth was at one time folded lengthwise, right over left, then folded again in half, so that the right side of the dorsal image came in contact with the right side of the facial image. This four-ply fold assures the exact align-

ment of these holes, with the largest holes on top and the smaller ones below. Such marks could have been made by small embers—perhaps from incense, very quickly extinguished.

If the folds of the Shroud show us that the L-shaped holes and the more serious burns could not have been produced at the same time, then history is telling us that the lateral marks were on the Shroud *before* the fire of 1532.

The Shroud of Lier

The Shroud of Lier, dated precisely (in 1516) by its maker, also bears characteristic markings. Thanks to the extraordinary kindness of Joss Waer, the church secretary at St. Gommaire in Lier, we have been able to make the following direct observations:

- The dorsal and facial images are represented at one-third of their actual size. On the shroud itself, the maker wrote: "Saltem est pars tertia sindon; (Quippe hoc ter major corpore Jesu erat.)" The scale is one-third that of the Shroud of Turin; that is to say, the body of Jesus was three times larger.
- The distinctive markings are accurately represented, with the four L-shaped holes, except that the mark on the left side, so minimal on the Shroud of Turin, does not appear here.

Unfortunately the Shroud of Lier is not the work of Albrecht Durer's hands. It was produced by someone working with a stencil (easily recognizable in the pattern of the stitching). The craftsman who produced this copy had certainly never seen the original Shroud of Turin. Most likely he had worked on the basis of a work by Durer, which—sad to say—we have lost.

If the folds of the Shroud show us that the L-shaped holes and the more serious burns could not have been produced at the same time, then history is telling us that the lateral marks were on the Shroud *before* the fire of 1532.

Scrupulous in his efforts to reproduce the original, but not understanding what he saw, this craftsman reproduced the lateral markings of the Shroud. But he rendered them in red, assuming that they were bloodstains. Moreover, he apparently added more color without the aid of the stencil, because the stains on the right are higher than those on the left—an error which geometry would not allow.

Taken together these errors—with the three L-shaped holes transformed into red stains—suggest that the man who produced the Shroud of Lier believed the stains to be signs of the authenticity of the original Shroud, and thus felt compelled to reproduce them.

The Iconography of the Codex of Pray

In his book on the history of the Shroud of Turin, the Dominican Father Dubarle remarked that an image of the Shroud appears in the famous Codex of Pray. That priceless book—which contains the first texts ever written in the Hungarian language, and which appears at the top of the list of precious manuscripts in the collection of the National Library in Budapest—can be given a fairly precise date between 1192 and 1195, thanks to the historical events it relates.



■ The Codex of Pray, second panel. Inset: The Codex of Pray, first panel.

The illustrations in the Codex of Pray form a group of four pen-and-ink drawings, set off in red and blue, which adorn the four faces of a parchment that has been folded in two. The central fold—between the descent from the cross on the left, and the burial in the tomb on the right—contains

several notches, through which threads are run to hold the parchment to the remainder of the Codex, from which it is otherwise separate.

The first frame shows a scene of the crucifixion; the bottom of the parchment having been washed out, only the form of the crucified Christ itself remains

intact. The second page is graced with a superb rendering of the descent from the cross, stunning in its graphic precision. The ladder leading up to the cross is secured by the crossbar, which passes between two rungs; such a detailed technique is truly exceptional.

The body of Christ is borne by Joseph of Arimathea and Nicodemus, while the Virgin Mary supports his head. The hands of these three figures are remarkably designed, with thumbs properly in place, while the thumb on Christ's right hand is clearly shown in extreme contraction, near the middle of the palm. We know from Barbet's research that a nail through the wrist produces just this sort of forced position.

Again, the L-shaped holes

The right-hand page is divided into two tableaus: the burial above, the arrival of the holy women below. In the former, the body is laid out on a cloth that is not fully spread. The remainder of that cloth passes across the right shoulder of Nicodemus and ends in St. John's left hand. One can clearly see the twisted folds under Christ's neck, although his halo masks most of that area. As soon as Nicodemus has finished pouring the aromatic ointment, he and St. John are prepared to place the remainder of the cloth over the front of Christ's body.

Here the hands of Jesus show only four fingers, quite clearly rendered; the thumbs are invisible. The right hand rests on top of the left. The chest is traced with linear marks. The face is bearded, framed by long hair, with a scar above the right eyebrow.

The lower image shows the three Mary's carrying their aromatic balm, accompanied by an angel who, with his feet on the shroud, shows them the long sheet, curiously folded, and showing the signs of three holes in the shape of an L!

The fourth panel shows Christ in his glory, and it too yields a harvest of precise observations. On the horizontal bar of the cross, the artist represents the nails used in the crucifixion. There are only three of them. So this artist somehow knew that the two feet of Jesus were fixed with a single nail. The wound on

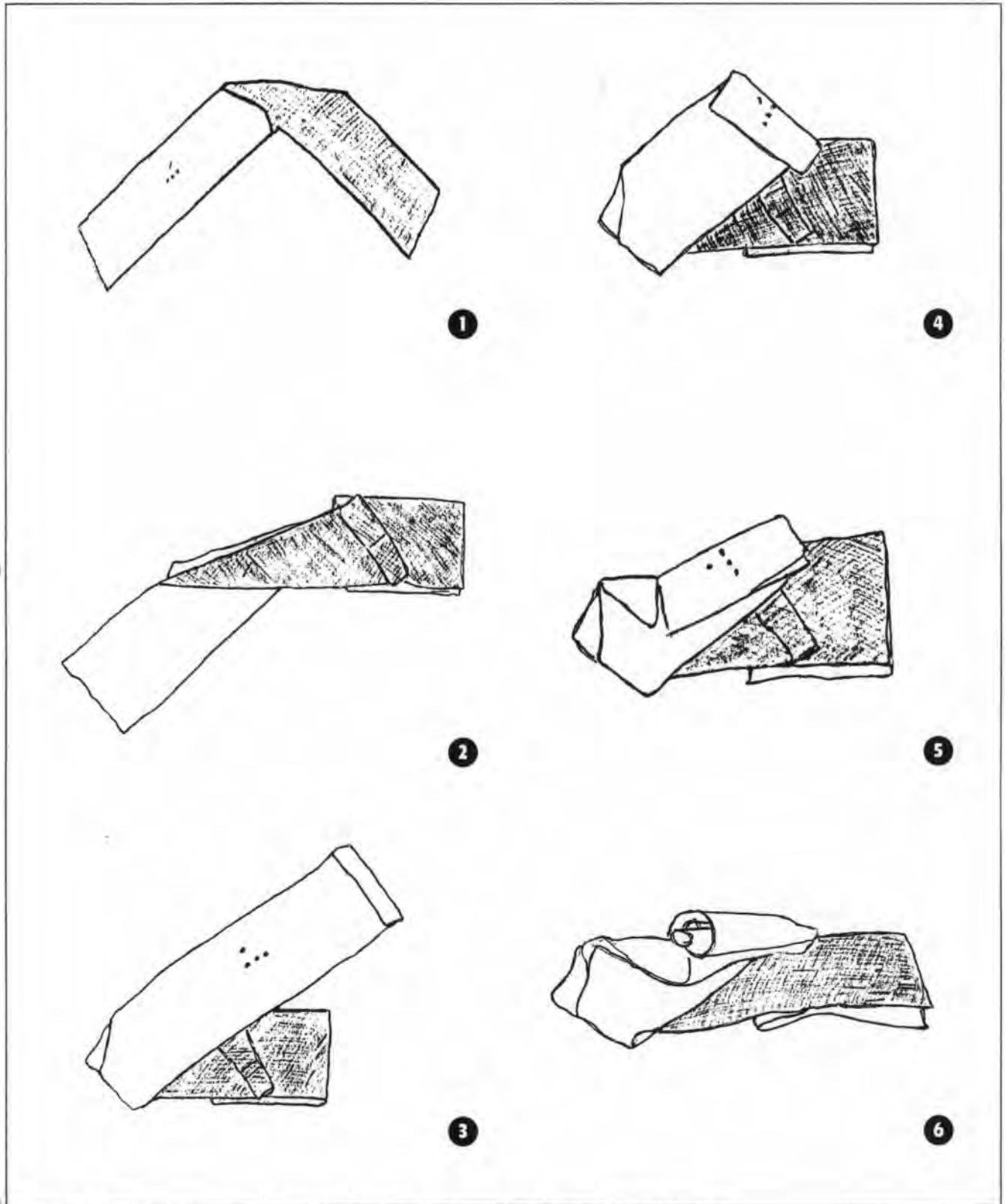
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■ **Folding the Shroud: This pattern would reproduce the image found in the Codex of Pray.**

the left hand is in the palm, but on the right hand the wound is on the wrist, and the fingers are abnormally long.

Beneath the image of Jesus, the chant of the Exultet is indicated on a four-lined staff, but without the square notes which were adopted during the 13th century. Musicologists use this detail to establish even more absolutely that the work dates to the 12th century—if any more confirmation were necessary.

What the artist knew

All in all, this admirable work demonstrates that the artist was aware of—and tried to convey—the following details:

- the shroud was twice the size of a man,
- the material bore L-shaped markings, with markings both front and back,
- Jesus wore a beard and long hair,
- the body was completely naked,
- the right hand was laid over the left,

Scrupulous in his efforts to reproduce the original, but not understanding what he saw, this craftsman reproduced the lateral markings of the Shroud. But he rendered them in red, assuming that they were bloodstains.

- the fingers were unnaturally elongated, and the thumbs invisible,
- the right wrist showed the mark left by the nail, and
- in all, three nails—not four, were used.

One is forced, therefore, toward one of two possible conclusions. Either the artist who produced the Codex of Pray had before his eyes, sometime between the years 1100 and 1200, a model that possessed all of the unique characteristics of the Shroud of Turin; or else he presented those very characteristics with an exactitude that beggars the imagination.

The folds of the shroud at Pray

The appearance of the shroud of Pray merits careful analysis. It is composed of two regions. One, apparently placed on

the table (or perhaps the ground), is covered with crosses, colored in red and spaced regularly. The other, which seems to rest atop the first, carries a notched design, which Father Dubarle compares to the pattern on a suit of armor, a design typical of the material that composes the Shroud of Turin.

That section of cloth is itself divided into five parts. The part furthest to the right carries a regular chevron pattern, and shows the L-shaped holes. The part furthest to the left is partially obscured by the feet and robe of the angel, but one can still see the chevron pattern. Just beneath the angel's left foot there are two broken red lines, very carefully drawn parallel to the chevron pattern. Below and to the right of these lines, the chevron pattern is replaced by a series of black crosses, irregularly spaced. Finally, right in the middle of the cloth there lies a complex tangle. This could be a veil thrown on top of the shroud, but it seems to be

entwined with the top border of the cloth. In an artist who had not completely mastered the technique of portraying folds (as is seen in the tunic of the glorified Christ), this detail could indicate that the tangled pattern is an integral part of the shroud itself, not something dropped on top of it.

Two difficulties need to be resolved. First, the L-shaped holes are oriented to the long axis of the chevron pattern, as in the Shroud of Turin, but if the smooth part of the cloth represents the front portion of the shroud (the area covered with crosses would represent the rear portion, folded over to double up the cloth), then the L-shaped pattern would be perpendicular to the lengthwise axis of the shroud—contradicting the evidence of the Shroud of Turin.

But then, the complex figure in the middle of the cloth may somehow be a key to the proper configuration of the cloth. Or the artist could even have made a gross error in the details which he deliberately left in evidence.

Second, the area covered by red crosses also shows the L-shaped holes. They are larger than those on the chevron portion, and aligned at a 45-degree angle to the general line of the crosses. In this same section there is also a curious pattern of three red crosses, also running at a 45-degree angle to the main cross pattern, but in the opposite direction.

Here, perhaps the artist is representing a complex structure which he uses to show the L-shaped pattern. Or perhaps any comparison with the Shroud of Turin is impossible.

Solving the puzzle

Let us suppose that the shroud being represented by the master of the Codex of Pray is completely identical to that of the Shroud of Turin. We could construct a model of the shroud before 1532, showing the facial portion and the L-shaped holes, with the whole fabric covered with the chevron tracings like those of Pray. The rear side of the cloth would then be lined with a regular pattern of red crosses.

Folding this cloth would then bring about the following pattern: The section that shows the dorsal image is folded right over left lengthwise, so that the lining is showing. The L-shaped holes then line up perfectly.

This section could then be placed on a flat surface, with the folds facing upward. Somewhere close to the L-shaped pattern, a fold in the fabric—leaving a major portion on the right side underneath—would then bring about the following configuration: the larger holes would be aligned at a slant, on a pattern of crosses slanted in the opposite direction, exactly like the image at Pray.

The left section of the shroud is also folded, left over right lengthwise, but here the cross pattern is folded into the middle. The chevron pattern is exposed, and the facial image is visible.

Folded at an angle to the right, this part would then rest partially on top of the fold. The right edge of this chevron-patterned section is then partially rolled up, and the roll then placed near the left section.

After all this, one notices that:

- Viewed from the side, the edges of the shroud are rolled into a double thickness, corresponding to the complex tangle in the middle of the image at Pray.
- The top surface of the rolled portion shows the L-shaped holes, now correctly oriented.
- Under the angel's left foot there is a section that carries an image—the face of the crucified Christ—just in the place where the image of Pray shows the red broken lines.

Surely one can ask why the master of the Codex of Pray did not choose to make a flat representation, like that the one at Lier. But that would have made

for an impossible composition. He could not show the angel and the three Mary's around a slack, flat cloth twice the size of a man, especially since he was trying to depict what the holy women saw when they arrived at the tomb—and what Peter and John saw as well.

To sum up, there is nothing that makes the Shroud of Turin incompatible with the image found in the Codex of Pray. On the other hand, the image at Pray bears many characteristics of the Shroud of Turin.

Conclusion

Whether or not one takes into account the solution proposed above to explain the image, it remains true that the master of the Codex of Pray reproduced, sometime between 1100 and 1200—or, to be more precise, sometime before 1195—the principal characteristics of the Shroud which is now in

Turin. Similarly the craftsman of Lier, 400 years later, reproduced the L-shaped holes produced by burns—another sign of authenticity.

Given that the carbon-14 test performed on the Shroud of Turin suggested an original date somewhere between 1260 and 1390; given that no one can dispute the date (1195 or earlier) of the Codex of Pray; given that a cloth cannot be burned before the thread is woven—we come inevitably to the conclusion that it is the carbon-14 dating, not the authenticity of the Shroud, that needs to be reconsidered. ■

Shortly before his death on Easter Sunday, the renowned French geneticist Jérôme Lejeune had been appointed by Pope John Paul II as the founding chairman of the Pontifical Academy for Life. This article is based on a paper which Dr. Lejeune delivered at a conference in 1993.



■ The Codex of Pray, fourth panel.