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# COMPARATIVE STUDY OF THE SUDARIUM OF OVIEDO AND THE SHROUD OF TURIN

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# 1 - INTRODUCTION.

Since Monsignor Giulio Ricci first strongly suggested in 1985 that the cloth venerated in Oviedo (Asturias, Northern Spain), known as the Sudarium of Oviedo, and the Shroud of Turin had really been used on the same corpse, the separate study of each cloth has advanced greatly, according to the terminology with which scientific method can approach this hypothesis in this day and age.

The paper called "The Sudarium of Oviedo and the Shroud of Turin, two complementary Relics?" was read at the Cagliari Congress on Dating the Shroud in 1990. This present paper can be considered the second part of that one. Great steps forward have been taken in all the scientific fields that were only beginning for us in 1990.

We cannot explain here all the new discoveries about the Sudarium made since 1990. Most of it has been published in the Book of Acts of the First International Congress on the Sudarium of Oviedo, held in Oviedo in 1994.

Well aware of the lack of knowledge about this cloth, following are the conclusions published in our recent study in "Biblia y Fe" (Bible and Faith) no. 71, entitled "The Historical Jesus: The Sudarium of Oviedo", published by the Biblical School of Madrid.

These conclusions are as follows<sup>1</sup>;

*A - According to the account of the bishop Pelagius (Pelayo), the Sudarium left Jerusalem in the Holy Ark (or chest) in the year AD 614 under the name of Sudarium Domini, the Sudarium of the Lord. According to this document, tradition associates the cloth with the sudarium of Jesus of Nazareth and no other person.*

*It should be pointed out that there are 600 undocumented years in the history of the cloth. If this cloth is in effect the sudarium of Jesus of Nazareth, it must have been kept somewhere from when it was used up to AD 614 when it left Palestine, but nothing is known for sure about these years. The historical investigation on the cloth has just begun, trying to shed some light on the situation.*

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<sup>1</sup> The method used in the investigation of the cloth consists of;

- Observation of the cloth.
- Physical and mathematical analysis of the data obtained and a theoretical idea of what could have happened and how in order to have produced the results analysed.
- Experiment or test design and their execution. Search for parameters that enable us to characterise and analyse the results obtained.
- Comparison of the results obtained from the experiments with the data taken from the cloth. New experiment design to include the parameters that have enabled us to characterise the data obtained from the Oviedo cloth.
- New experiments to verify that the results obtained are compatible with what has been observed on the cloth from the physical point of view.
- Write up the corresponding reports. Meetings, symposium or congress for all the team to validate and accept the results.

This methodology is similar to that used in any physical or biological investigation project, in general terms. From the scientific point of view, a long time has to elapse before any results can be accepted as definitive. It is obvious that the results must be treated as a whole. Any individual result must be compatible with the rest, and if it is not, there should be a check on how it was obtained. This is exactly the case with the results obtained by Professor Baima Bollone on having the cloth dated by the method known as Carbon 14.

*However, it should be pointed out that the information the cloth contributes to understanding the death of the man whose head it covered is awful and shocking. The picture of a corpse hanging on a cross, with blood coming out of its nose and mouth, must have been truly horrible, especially thinking of the Jews. It is therefore understandable that if a cloth were used to cover Jesus' face when he was still on the cross, no mention would be made of it, as it would bring back the memory of that terrible moment. In other words, the idea of the dead body of Jesus of Nazareth, bleeding through the nose and mouth, was impossible to describe for a Jew.*

*This could be an indirect explanation of why the cloth's existence was kept silent up till the time it left Jerusalem. The medieval interest in relics gave rise to the only documents found up to now that speak of the present and past of this cloth.*

*It should be said that in our investigation we have found nothing to contradict this tradition, except the carbon 14 dating ordered by Prof. Baima Bollone. According to this experiment, the cloth dates from the 7th century. Baima Bollone himself says the result should not be given undue importance, but it is the first contrary information obtained<sup>2</sup>.*

*B - It is also important from the point of view of liturgy that the cloth has always been venerated. In our opinion this veneration has been and still is something exceptional compared to that of other relics. The Good Friday blessing, one of the most important in the Catholic liturgy, is given with the sudarium. This means that its authenticity has never been in doubt. It even had its own mass up to the 17th Century, when it was suspended despite the pleas of the bishop of Oviedo in 1640. The*

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<sup>2</sup> Baima Bollone's contribution to the «1st International Congress on the Sudarium of Oviedo» can be found in the Book of Acts of the congress, pp. 428 - 429;

*"The result is not easy to interpret due to the well known difficulties of dating textiles and to the conditions under which the sample was kept from when it was taken (1979) until it came to us some years after Frei's death in 1983.*

.....  
*Textiles left alone in normal atmospheric conditions are prone to becoming highly contaminated. The first observations made of the Lirey-Chambéry-Turin Shroud under an electronic microscope by P.L. Baima Bollone, P. Coero Borgia and E. Morano in 1978 showed a large amount of contaminating material that does not form part of the original cloth.*

*The sudarium also suffered the explosion of the Cámara Santa in 1934, remains of which can be seen on the X ray spectrum.*

*The carbon dating we ordered should be nothing more than a stimulus to more precise investigations under better conditions".*

Independently of these results, neither the EDICES nor the cathedral of Oviedo has any knowledge of the methods used and no definite laboratory report has been seen. The cathedral authorities were not informed about the analysis and no particular laboratory was mentioned. Given the difficulties involved in dating linen (see Orazio Petrosillo and Emanuela Marinelli, "La Sindone: un enigma alla prova della scienza" ed. Rizzoli Libri, Milano 1990, pp. 145 ff.), our team is studying the possibilities of repeating the experiment along with other procedures to contrast the results. Samples whose origin is known should be dated at the same time as the blind sample. These are the so-called control procedures, without which it is not possible to know if the method used is totally reliable or not. On the other hand, if the result already obtained is correct, then the cloth is from the 7th century, and this would give rise to the following question - it could not be the sudarium of Jesus of Nazareth, so why would it be called "Sudarium Domini"? If it were a forgery, this would only make sense if the cloth were well known in itself along with its use. What point would there be in venerating a dirty rag, stained with the blood of a corpse, under the name, no less, of "Sudarium Domini"? According to the C14 result, it left Jerusalem as soon as it was made. So this cloth, used to cover the head of a person cruelly executed, was called the Lord's cloth, recalling what had happened six centuries before, with no reference to a cloth that covered Jesus' face and head when the dead body was still on the cross.

We do not think that this result is sufficient to eliminate the tradition, even though there is no known documentation of the cloth for the first 600 years. Only a known object is forged, not an unknown one that was also degrading. This shows the need for developing a serious dating programme with all the methods possible. We are working on it.

*reasons for the suppression of the mass are unknown, although it could have had something to do with the confusion of the word "sudarium", sometimes applied to the Shroud too. The Shroud has had its own mass since 1506, approved by Pope Julius II. It could have been considered the true "sudarium" rather than the one in Oviedo, whose only value was that of tradition, as it was impossible to identify with something related to a human being, even less to Jesus of Nazareth.*

*C - As a summary of the results obtained up to now from the forensic, geometrical and mathematical studies carried out by the EDICES, the following can be confidently stated<sup>3</sup>:*

*1. The Sudarium of Oviedo is a relic, which has been venerated in the cathedral of Oviedo for a very long time. It contains stains formed by human blood of the group AB.*

*2. The cloth is dirty, creased, torn and burnt in parts, stained and highly contaminated. It does not, however, show signs of fraudulent manipulation.*

*3. It seems to be a funeral cloth that was probably placed over the head of the corpse of an adult male of normal constitution.*

*4. The man whose face the Sudarium covered had a beard, moustache and long hair, tied up at the nape of his neck into a ponytail.*

*5. The man's mouth was closed, his nose was squashed and forced to the right by the pressure of holding the cloth to his face. Both these anatomical elements have been clearly identified on the sudarium of Oviedo.*

*6. The man was dead. The mechanism that formed the stains is incompatible with any kind of breathing movement.*

*7. At the bottom of the back of his head, there is a series of wounds produced in life by some sharp objects. These wounds had bled about an hour before the cloth was placed on top of them.*

*8. Just about the entire head, shoulders and at least part of the back of the man were covered in blood before being covered by this cloth. This is known because it is impossible to reproduce the stains in the hair, on the forehead and on top of the head with blood from a corpse. It can therefore be stated that the man was wounded before death with something that made his scalp bleed and produced wounds on his neck, shoulders and upper part of the back.*

*9. The man suffered a pulmonary oedema as a consequence of the terminal process.*

*10. The cloth was placed over the head starting from the back, held to the hair by sharp objects. From there it went round the left side of the head to the right cheek, where, for apparently unknown reasons it was folded over on itself, ending up folded like an accordion at the left cheek. It is possible that the cloth was placed like this because the head formed an obstacle and so it was folded over on itself. On placing the cloth in this position, two stained areas can be anatomically observed - one over the "ponytail" and the other over the top of the back.*

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<sup>3</sup> Acts of the 1st International Congress on the Sudarium of Oviedo, Centro Español de Sindonología, Valencia 1996. See the papers by Ángel del Campo, José Antonio Sánchez and Delfín Villalaín. See also Acts of the 2nd National Congress on Paleopathology, Valencia 1993.

*Once the man had died, the corpse stayed in a vertical position for around one hour, and the right arm was raised with the head bent 70 degrees forwards and 20 degrees to the right.*

*How can this be reasonably thought of as a "vertical position"? If the man of the Oviedo Sudarium was hanging by the right arm only, then the rest of the body, especially the head, would be relatively far from this arm, hanging to the left. This position is incompatible with that of the head that the cloth wrapped. It is therefore easy to deduce that the body was hanging by both arms. But if the body was hanging like this, without support for the feet, the man would have died in 15 or 20 minutes, and there would not have been enough time to generate the amount of liquid necessary to form the stains visible on the cloth. If the body were hanging with both arms above the head, then the head would have been leaning forwards and not to the right. So the only position compatible with the formation of the stains on the Oviedo cloth is both arms outstretched above the head and the feet in such a position as to make breathing very difficult, i.e. a position totally compatible with crucifixion. We can say that the man was wounded first (blood on the head, shoulders and back) and then "crucified"<sup>4</sup>.*

*11. The body was then placed on the ground on its right side, with the arms in the same position, and the head still bent 20 degrees to the right, and at 115 degrees from the vertical position. The forehead was placed on a hard surface, and the body was left in this position for approximately one more hour.*

*12. The body was then moved, while somebody's left hand in various positions tried to stem the flow of liquid from the nose and mouth, pressing strongly against them. This movement could have taken about 5 minutes. The cloth was folded over itself all this time. The cloth was then straightened out and wrapped all round the head, like a hood, held on again by sharp objects. This allowed part of the cloth, folded like a cone, to fall over the back. With the head thus covered, the corpse was held up (partly) by a left fist. The cloth was then moved sideways over the face in this position.*

*Thus, once the obstacle (which could have been the hair matted with blood or the head bent towards the right) had been removed, the cloth covered the entire head and the corpse was moved for the last time, face down on a closed left fist. This movement produced the large triangular stain, on whose surface the finger shaped stains can be seen and on the reverse side of the cloth, the curve inscribed on the cheek. Like the previous movement, this one could have taken 5 minutes at most.*

*13. Finally, on reaching the destination, the body was placed face up and for unknown reasons, the cloth was taken off the head.*

*14. Possibly myrrh and aloes were then sprinkled over the cloth.*

Taking these results into account, it is easy to understand the most important conclusion of the «I International Congress on the Sudarium of Oviedo, which took place in said city, in 1994.» - **A complete joint study of the Sudarium and the Shroud is necessary.**

The aim of this paper is to communicate to investigators and students of the Shroud one step more of the data and results that coincide for both cloths.

## **2 - THE APPROACH TO THE PROBLEM.**

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<sup>4</sup> We have not observed any sign of how the man was fastened to the cross.

Even though it might seem needless to say it, we have to begin with what we have. We have two archaeological objects, two linen cloths. Each has been described by its respective specialists.

The possibility that the Shroud is the funeral cloth of Jesus of Nazareth mentioned in the canonical and apocryphal gospels has been analysed, as has the possibility that the Sudarium of Oviedo is the "soudarion" mentioned by said gospels and that of the gospel of John as being present in the tomb of Jesus on the morning of the appearance to Mary Magdalene.

Information both for and against both cloths has been coldly and scientifically evaluated. Our conclusion from this is that in both cases it seems much more possible<sup>5</sup> that the cloths are genuine than the opposite. This opinion is based on **the joint consideration of all the information we have**.

We should also remember that the investigation is open. Not all the possible studies have been carried out on the Shroud, e.g. more analysis and result treatment is possible. Some of the basic studies on the sudarium have yet to be done, e.g. the historical study and an analysis of the textile to date the cloth. We think there is more to discover than is already known. It is not easy to obtain and assimilate the information contained in the cloths. Just about every study method has to be designed just for the tests that need to be done. It is clear that when one leaves the established routine in any field of investigation, a specific methodology has to be drawn up for the case in question. This means a higher possibility of making mistakes on analysing samples and establishing hypotheses about the results obtained. These results have to be contrasted in order to be sure that what has been obtained can be accepted. All this means slowness. Our team started work almost ten years ago and we are still at the beginning<sup>6</sup>.

We would like to make it clear that the authors of this paper have not seen the Shroud and have not had the chance to study it at first hand.

Consequently, what we are about to say about geometrical comparisons can only be taken as second hand information, rigorous, but not a contrasted result. Working with photographs can lead to significant mistakes, despite having John Jackson<sup>7</sup> in our team and therefore having first hand information.

No result of the geometrical study that follows can be taken as definitive or conclusive. It is a continuation of similar work started some years ago<sup>8</sup>.

Having said this, and before referring to any properties of the Shroud image, we should say that we do not know how this image was formed. As the image is the essential element for our comparison, it should be stated before starting that;

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<sup>5</sup> We deliberately say "possible" rather than "probable". Probability is a mathematical concept where successive things are equally possible. In this case we are unaware of any other cloth similar to either one that could be "possibly" authentic. As the cloths are unique as far as the information from them goes, it is not strictly correct to speak of "probability". If the cloths in question are not the real funeral cloths of Jesus of Nazareth, we have no idea where the real ones could be, if they still exist.

<sup>6</sup> This is not what can be read in certain books that contradict what we have done and presented in various congresses for debate and analysis. With very few exceptions, they are statements made in absolute ignorance about the results. It is a slow business to be able to say something serious, but it is no faster to find a base to reject it.

<sup>7</sup> Co-ordinator of the Shroud of Turin Research Project, the American team that observed and studied the Shroud in 1978.

<sup>8</sup> "El Sudario de Oviedo y la Síndone de Turín, ¿dos reliquias complementarias?", *Datazione della Sindone*, Cagliari 1990.

- The bloodstains visible on the face of the Shroud image were produced in three spatial dimensions and are not centred when the Shroud is flattened out. The farther the stain in question is from the centre of the face, the more it is off centre, which is why stains from the forehead are seen on the hair. This is a consequence of the Shroud's flattening out on collapsing through the body, according to Jackson's theory.
- However, the dorsal image was not formed in the same way as the frontal image. This means that the bloodstains on the dorsal image are not displaced and therefore the results of this comparison with the Sudarium of Oviedo is not the same as in the aforementioned point.

Consequently, the image of the face on the Shroud and the one that can be obtained from the sudarium cannot coincide on one level, although if both were used on the same corpse, they should have the same elements and characteristics that will enable us to establish a link between the same elements on each head.

### **3 - GEOMETRICAL COMPARISON OF THE SUDARIUM AND THE SHROUD.**

We will begin the comparison saying that from the point of view of textiles, the Oviedo cloth is linen, perpendicular in warp and weft. This pattern is called taffeta. The Shroud is linen with a herringbone weave. Microscopically, both cloths have the same thickness and the same number of threads per surface unit<sup>9</sup>.

In spite of both being made of linen and having the same microscopic structure, the difference between a taffeta and the Shroud weave shows that the Oviedo cloth is coarser and was probably meant for domestic use as well as a cloth for drying sweat of course, or for wearing on the head according to the customs of the time.

The herringbone weave was much more expensive than anything to be found in Jerusalem. It normally came from Syria, more specifically from the oases around the city of Palmyra, as we were told at the Rockefeller Institute of Jerusalem.

The gospels tell us that the shroud in which the corpse of Jesus of Nazareth was wrapped was bought by Joseph of Arimathea, a rich and influential man.

The silence about the sudarium could have something to do with its use and the circumstances in which it was used.

From the Roman point of view, it seems that no cloth was normally used to cover the face of crucified people. The dead bodies were normally thrown into a common grave with no kind of ceremony, as crucifixion was reserved for crimes like high treason or military rebellion, and even then never for Roman citizens<sup>10</sup>.

<sup>9</sup> "La Sindone: Indagine Scientifique". Acts of Siracuse Conference, 1987.

<sup>10</sup> While we were in Jerusalem in September 1995, we spoke to Dr Vassilios Tzaferis, Director of the Excavation Survey Department of the Israel Antiquities Authority and asked him the following question: According to the story of Flavius Josephus, after the Roman invasion of Jerusalem in AD 70 there was no wood left for crucifying people. How is it possible that if so many people died in this way there are no remains of it in Jerusalem? He answered that the dead body was normally taken down from the cross by breaking the arms and legs and then thrown into a common grave, so it is nothing out of the ordinary that no remains have been identified because arms and legs were lost and it is not easy to associate them with a crucifixion.

drugged drink to the criminal or water to relieve his thirst as the torment could then last longer, and it was also customary to cover the face of the corpse when it became disfigured. This was done by pious Jews who were present at the crucifixion. This situation could have changed completely when Pilate gave permission to take the body away. The sight of the bleeding corpse, with a disfigured face and pulmonary oedema liquid coming out of the nose and mouth, should have been enough to warrant the use of a cloth to cover the face, in accordance with the general instructions about blood in the Pentateuch and the specific instructions of the Sanhedrin. It was also absolutely necessary to stem the blood flow as for a Jew the presence of blood was unbearable and should be avoided. Anything stained with blood should be buried with the corpse.

From a geometrical point of view we can compare the head of the man on the Shroud with that of the man of the Sudarium, since as we have already stated, the Oviedo cloth was used to wrap a human head.

The process that killed the men of the cloths should also be compared from the forensic point of view.

Thirdly, both heads left bloodstains on their respective cloths. This is a double comparison - the geometry of the stains and the blood itself.

With the intention of following a chronological order as close to what actually happened as possible, we should mention first of all the already cited work of Ricci for the «I International Congress on the Sudarium of Oviedo» and his studies previously published in the book "L'Uomo della Sindone è Gesù". His first findings on the Oviedo cloth are published in this book. He gives an acceptable macroscopic overlay of the part we have called Obverse Left (OL) with the face of the Shroud image. Ricci draws our attention to various points;

*"The first characterising element that caught my attention in September 1965 was a bloodstain that I had observed some months previously on the right hand side of the mouth of the man on the Shroud".*

As we can see, Ricci refers to the first time he examined the Oviedo cloth. At that time nobody knew how this particular stain had been produced. Today we know it is human blood of group AB on both cloths.

Ricci continues;

*"I should point out that it was and is difficult to see this stain on normal photographs of the Shroud.*

*Two years later, in 1967, I sent one of the photos taken by Enrie (official Shroud photographer) in 1931 to Dr John Jackson (STURP). He returned an enhancement of this photograph which supports this hypothesis, deduced from a simple axiometric study of the sindonic face and which permitted me to focus better the right side of the mouth, whose interpretation is unclear in normal photos of the face.*

*With this method, a clotted blood flow was visible all over the beard - this was not to be seen on the left-hand side of the mouth.*

*This particular observation, unknown at that time to Shroud studies, gained more credit when a later study was carried out on the movements of the Shroud man on the cross. His first movement was from a position of leaning forward to lifting himself up with a relative movement to the right,*



*enabling the man to speak, and precisely when he was leaning to the right blood came out of the right hand side of his mouth..."*

Ricci says then that after the movements on the cross had been studied, two became clear - first, the man leaned forward and then he lifted himself upwards and to the right.

We do not agree with Ricci about the blood that came out of the right hand side of the mouth. We think it is "*post-mortem*" blood i.e. shed after death.

It is a significant coincidence that the relative position of the stain in relation to the mouth is very similar on both cloths, but we should also point out that the angle formed by the stain in relation to the average horizontal plane of the mouth is approximately 115°. This angle is formed on bending the head towards the right<sup>11</sup>. The angle as measured on the Oviedo cloth unfolded on a flat surface is c. 119° and c. 110° on the Shroud. These results are geometrically coherent. Bearing in mind that we do not know how the image on the Shroud was formed, if we consider it a vertical projection from the corpse onto the cloth (Jackson's hypothesis) we should obtain a smaller angle, as it is a projection onto a surface whose curvature is lessening as the cloth collapses. The angle measured on the unfolded cloth should be slightly higher than the real one, as can be easily seen on any foldable surface. The angle formed by the plane defined by the axis of the mouth and the symmetrical axis of the bloodstain with the horizontal plane, when the image was formed, is roughly 17°, which is compatible with the first position of the Shroud.

As for the area of each bloodstain, it is 1,980 mm<sup>2</sup> on the sudarium and 1,310 mm<sup>2</sup> on the Shroud, which is coherent for the geometrical reasons already explained.

The second detail that caught Ricci's attention was;

*"... the left tip of the beard, which has more hair than the right one. The hair on the right tip seems to be less dense. This is true on the Shroud and something similar can be seen on the Oviedo cloth.*

*Comparing the life size photograph of the face on the Shroud taken by Enrie with the one I brought with me from Oviedo, and putting one on top of the other ... I was taken aback by the perfect fit of the Shroud image with the macroscopic sudarium outline. In other words, the superimposition was clear, not only with the first element (the blood at the right hand side of the mouth) by itself, but also with the second, the tip of the beard (on the left). The same is also true for the right hand side of the beard, with less hair - it is the same on the sudarium.*

*This could be "confirmation" for the hypothesis that both the Shroud and the sudarium were placed on the SAME FACE".*

The following details should be noted on analysing this result;

As we have just seen, Monsignor Ricci did nothing more than a macroscopic comparison between the part of the sudarium he could see (and which we have called Obverse Left) with the image of the face on the Shroud. If one sees the obverse of the Oviedo cloth with the naked eye, without ever having carried out any microscopic studies it could seem to be the part that was in direct contact with the face. It is also clear that Ricci discovered the symmetry between the two large stains on the

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<sup>11</sup> This angle has been measured with a goniometer placing a glass head in such a position as to enable the stains on the sudarium to be reproduced, as described in the Acts of the Oviedo Congress. This is therefore a measured angle and can be considered as the true one on the unfolded Oviedo cloth.

obverse of the sudarium (OL and OR) and at the same time showed that the cloth had been folded over on itself. The problem is that it should be determined how the cloth was folded. According to our microscopic observation, there is no doubt as to which part of the cloth was in direct contact with the face of the corpse - the one we have called in all our work "Reverse Left". The cloth was folded in such a way that the face stained this part directly, then the blood filtered through the Obverse Right and the Obverse Left with the Reverse Right on the outside.

This can be confirmed with no doubt at all for two significant reasons; all the Reverse Left is covered in blood and there is much more haematic substance on this part than on any other. Secondly, the fold mark that defined how the cloth was folded is on the Reverse and not on the Obverse. So the part of the cloth that was in direct contact with the face is the Reverse Left, the two interior stain groups are those on the Obverse and the outermost group is the one we have called Reverse Right. We would like to make an important observation about Ricci's work:

On comparing the sudarium with the Shroud of Turin he chose the wrong area. This gave rise to a problem that Ricci could not solve - **how to place the cloth correctly over the head it stained.**

Ricci makes some more comparisons between the cloths and finally concludes;

*"... the key to reading this comparative study is the blood, the same as on the Shroud. However, while the Shroud, contrary to any work of art it has inspired over the centuries, enables us to reconstruct completely, and almost descriptively, each of the five phases of the passion of the man it wrapped, the sudarium of Oviedo, as Saint John suggests in his gospel, was limited to the final phase of the crucifixion i.e. the descent from the cross. It was a pious gesture to cover the "disfigured" face, stained by ecchymosis and abundant blood. The sudarium's presence on His face is limited to the brief time necessary to take the dead body of the Lord from Calvary to the nearby tomb".*

We would like to reiterate the importance of Ricci's work - it is a milestone for any student of the sudarium and for us a pleasant memory. There will always be a "before" and an "after" Ricci in the investigation of the Oviedo cloth.

Now that we are presenting our work, as in all our expositions, we should make some things clear in order to avoid mistaken or simply confused interpretations.

We have seen that Ricci compared the morphology and wounds on both faces by **superimposing them on a flat surface**. We too started our analysis in this way, and this is what was presented at the Cagliari Congress in 1990<sup>12</sup>.

But now is the time to take the study one step further. This comparison is valid to get a first idea and to draw attention to the similarity between the cloths. However, it cannot be more than a first idea because the stains of the cloths **do not necessarily have to coincide on a flat surface**. Stains produced by the same face at different times can be in different positions that cannot be superimposed if the cloths are unfolded and **spread out on a flat surface**. Even then the cloths would have to be placed very carefully, and not be moved at all while the stains were being formed, and the exact method of stain transfer from the face to the cloth would have to be known. This is not the case here. Sideways movements on the forehead can be appreciated on the Oviedo cloth, so the same stains can be seen in different places. We have already mentioned the difficulties that arise

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<sup>12</sup> "El Sudario de Oviedo y la Síndone de Turín, ¿dos reliquias complementarias?", Datazione della Sindone, Cagliari 1990.

when we try to compare the bloodstains and image on the Shroud. Without going into too much detail in this kind of consideration, it is enough to say that **the same face can produce different stains** (especially on different cloths) **and different faces can produce very similar stains on different cloths**. Thus the comparative analyses on a flat surface can only give a basic idea of the study of the two faces.

More information can be obtained from the study of whether quantifiable correspondence that can be evaluated in terms of geometric probability can be established for the cloths.

As we have already said, we think that the part of the sudarium that was in direct contact with the face was the one called Reverse Left, so we should be able to show the existence of certain coincidences between the following anatomical elements of **the face** of the man of the Sudarium and that of the man on the Shroud:<sup>13</sup>

1. The nose - a total area of 2,280 mm<sup>2</sup> on the sudarium and 2,000 mm<sup>2</sup> on the Shroud.
2. The superciliary ridges.
3. Absence of right cheekbone corresponding to the swelling observed in this area on the Shroud.
4. Swelling on the right side of the nose, c.100 mm<sup>2</sup> on the sudarium and c.90 mm<sup>2</sup> on the Shroud.
5. The tip of the nose, nostrils and nose-wings.
6. The position and size of the mouth, especially the blood flow on the right hand side, as already mentioned, first described by Ricci.
7. The chin.
8. The shape of the beard.

If we then observe the front left quadrant of the man of the Shroud and the front left quadrant of the sudarium of Oviedo we can see that there is an almost biunique correspondence between the position and size of the stains on each cloth. However, the ones on the Oviedo cloth occupy a greater area as is geometrically to be expected, as the movement described by Jackson on describing the Shroud image<sup>14</sup> can be observed. The area of these stains is 686 mm<sup>2</sup> on the sudarium and 528 mm<sup>2</sup> on the Shroud, a coincidence of 80% on a flat surface, and 88 mm<sup>2</sup> on the sudarium compared to 70 mm<sup>2</sup> on the Shroud, with a sideways movement of c.2 cm (the stain on the Oviedo cloth being in the more external position).

If we observe the right frontal area, we can see that the drop of blood over the left eyebrow is geometrically compatible with the stain in exactly the same area on the sudarium. Both areas are 80 mm<sup>2</sup> and the relative position is practically the same on both cloths. It is interesting to note that this stain can be seen in two positions on the Oviedo cloth, a clear sign that the cloth was moved sideways over the face.

The correspondence between the bloodstains on the two cloths is therefore acceptable (in the areas where the face is seen from the front) and the same can be said for the marks or traces visible on each. This correspondence is evident with the size of the stains, their relative positions on each cloth, and their origin. If we observe the stains on the Shroud face in detail, it seems that they have been gently "dragged" to the right, which would fit in perfectly with the direction deduced and described above for the movement of the corpse of the man of the sudarium of Oviedo.

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<sup>13</sup> All the measurements of stains, distances etc. must be understood as approximate, especially in the case of the Shroud, where it is not possible to determine the outlines of the stains.

<sup>14</sup> Biblia y Fe no. 70, "Aproximación al Jesús histórico I : La Síndone de Turín", Escuela Bíblica, Madrid 1998.

Summing up the coincidences between the bloodstains visible on each face, we can say that it is possible to establish correspondence in the following aspects;

- The size of the stains is geometrically compatible, as is their relative position on each cloth.
- The blood is human, of the group AB on both cloths.
- The stains formed by **blood shed in life** are the same on each cloth.
- The stains occupy the positions predictable from the formation of the Shroud image, with the sideways movement discovered by Lavoie and accepted by Jackson.

But the coincidences do not end here.

Reminder of how the sudarium was placed over the head that stained it;

The first step was to fasten it to the back of the head and ponytail with sharp instruments (pins of bone or something similar). The cloth fell over the left shoulder and top of the back of the man in question and went round the left side of the face. The Oviedo cloth shows that all the area it touched was completely covered in blood **BEFORE BLOOD CAME OUT OF THE DEAD BODY**. This is a point of great correspondence between the two cloths, as the stains at the back of the head on the Shroud coincide with those on the sudarium, in size, relative position and origin (blood shed in life) and both cloths are bloodstained in all the part that corresponds to the left cheek. The stained areas on both cloths are 2,455 mm<sup>2</sup> for the Shroud and 267 mm<sup>2</sup> on the sudarium. It is practically possible to superimpose the area on the sudarium with the corresponding stains on the Shroud so that the cranial parabola already described on the sudarium fits the same area on the dorsal image of the Shroud following the bloodstains<sup>15</sup>.

The bloodstains on the back of the man also correspond on the two cloths. On the Oviedo cloth they can be found in the lower left and right corners.

Something else should also be mentioned - the almost complete lack of movement when the images from the dorsal image of the Shroud are compared to their counterparts on the sudarium, which coincides with Jackson's theory about the image formation.

#### **4 - FORENSIC COMPARISON - WERE THE TWO CLOTHS USED ON THE SAME CORPSE?**

We now have to talk about the blood as a common element on both cloths. We have already said that it is human blood of group AB in both cases<sup>16</sup>.

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<sup>15</sup> As can be seen in the illustration, the difference in value for the two areas calculated is due to the fact that the area on the Shroud corresponds to all the stained surface at the base of the back of the head whereas on the sudarium the areas is much smaller. It does however fit in perfectly with the corresponding area on the Shroud. It is also probably due to the fact that the stains were produced at different times on each cloth - on the sudarium when it was placed over the head (i.e. when the body was still on the cross) and so only the stains produced by wounds that were reopened can be seen, when that part of the head rubbed against the cross. One hour later the cloth was stained on entering into contact under its own weight with the above-mentioned area.

The stains on the Shroud, however, must have been produced when the body was placed face up and so the whole weight of the head pressed on the cloth and a much larger area was stained - the opposite of what happened with the Oviedo cloth.

What really stands out, therefore, is that the stains that correspond to the base of the back of the head on the sudarium fit in perfectly with the same area on the Shroud when the two cranial curves (parabolas) coincide.

The order of size of the smaller stains can also be seen to be the same on both cloths - between 0 and 75 mm<sup>2</sup>.

<sup>16</sup> For the Shroud see Biblia y Fe no. 70 and for the sudarium no. 71.

**The definitive proof would be the DNA test on the cloths, still pending due to the difficulties of working with old blood and the low number of cells.**

Having reached this point we can only repeat Ricci's question - were the cloths used on the same body? Can we say that this body was that of Jesus of Nazareth?

From the archaeological point of view the cloths of Oviedo and Turin have points in common as far as use is concerned, especially the following;

1 - From the point of view of textile study, there is nothing to eliminate the possibility that they existed together, except of course the C 14 results (13th or 14th century for the Shroud, 7th century for the sudarium). There are many older linen cloths in existence<sup>17</sup>. \_

2 - From the forensic point of view, it is clear that the Shroud wrapped the dead body of a man who had been whipped, crowned with thorns and crucified. The sudarium of Oviedo wrapped the head of a body whose death is perfectly compatible with crucifixion and the wounds inflicted before death visible on the Shroud. The two deaths are very similar.

3 - The Shroud wrapped the whole body, including the head. The sudarium wrapped all the head of a corpse and touched the shoulders (especially the left one) and the back slightly. The correspondence between the bloodstains on the cloths is practically biunique i.e. each bloodstain has a corresponding stain on the other cloth as far as size and blood group is concerned, always bearing in mind (with the margin of error) that this correspondence is evident ALL ROUND THE HEAD. The stains on the left-hand side of the front show the sideways movement described by Jackson. The further the stains are from the middle of the face, the more this movement can be seen. It should also be said that the bloodstains on the head of man on the Shroud show signs of having been covered with another cloth. The specific nature of these stains and their relative position on the cloths coincide in such a way as to make it necessary to see on the Shroud if the coincidence is also evident on the reverse side of each cloth. This would enable us to evaluate in terms of geometric probability the formation of the stains with the cloths unfolded on a flat surface. We could ask the following question - what is the probability that two sets of stains formed at random, at different times by different bodies, could correspond to such an extent on flat surface? Although we do not have the answer to this question yet, it is clear that the probability is very small. If we add to this the physical (time involved and formation mechanisms of the stains) and historical conditions, we are left with only one possible answer - everything seems to indicate that both cloths wrapped the same body and this body was that of Jesus of Nazareth, a Jew crucified in Jerusalem under the Roman governor Pontius Pilate on 3rd April 33 (or 7th April 30) at midday, local time, in the place called Golgotha<sup>18</sup>. \_

Despite the positive sound of this answer, we should remember what we said at the beginning of this brief geometric presentation - the conclusion could be totally wrong and should be properly evaluated with studies on the Shroud itself.

4 - Regardless of what has just been said, attention should be called to certain points which could go unnoticed, as for example;

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<sup>17</sup> In his book "L'Uomo della sindone è Gesù" Ricci also mentions the presence of various species of pollen from Palestine on both cloths. We have not gone into this matter as it is still under study by our team.

<sup>18</sup> These are the two most probable dates according to specialised bibliography. 3rd April seems to us to be the more probable of the two. See Biblia y Fe no. 71.

For some reason that has yet to be explained, the sudarium of Oviedo was taken off the body whose head it had wrapped. The cloth was then kept and venerated. Tradition tells us that this is not unusual if the body in question was that of Jesus of Nazareth, as we know he was wrapped in a Shroud and in John's gospel the position of the sudarium in relation to the Shroud tells us that it had been taken off before the Shroud was used.

There are similar arguments when we talk about the Shroud. A coincidence that normally goes unnoticed is therefore brought into the spotlight - *the dead bodies of each cloth have never been found. This coincidence is only coherent if the body was that of Jesus of Nazareth.* Another possibility, remote and illogical, would be the faking of the Oviedo cloth, contrary to the ideas of the time and despite the lack of knowledge of the physiopathological process involved.

The Oviedo cloth could not have been placed between the face and the Shroud, as if it had been, the image on the Shroud would not have been formed. So in the case of Jesus of Nazareth we have this double coincidence - unusual use of the cloth called a sudarium and the disappearance of the body it was used on. Neither the Shroud nor the sudarium have ever been connected to any body other than that of Jesus of Nazareth. Consequently we can say that the Shroud of Turin and the Sudarium of Oviedo provide information that agrees perfectly with the shroud and sudarium mentioned by the gospels. The only negative element is the C 14 dating, which causes discrepancies in the case of both cloths.<sup>19</sup>

This contradiction, in our opinion, makes the result of the C 14 dating very difficult to interpret, because even if the body in question is not that of Jesus of Nazareth, we do not see how it can be affirmed that the two cloths did not cover the same body. This immediately throws the C 14 dating out by seven centuries. Apart from the agreement with the cloths mentioned in the gospels, from the archaeological point of view the two cloths provide us with very valuable information both in quantity and quality about the process followed for a crucified corpse wrapped in this manner in accordance with the funeral rites and customs of Palestine 2,000 years ago. This information cannot be faked. The exceptional circumstances of this case enable us to connect it with Jesus of Nazareth. No other corpse has been identified as the cause of the stains and image analysed in this paper.

## **FINAL COMMENTS.**

As a final comment we can say that the studies carried out up to now on the Oviedo sudarium have brought to light the information contained in the cloth, which is both extremely interesting and important. As we have said many times, the "*Sudarium Domini*" covered the head of a dead body that had died in conditions totally compatible with those of crucifixion. The man in question had been previously wounded to such an extent as to have his hair, top of the back and the parts of the chest and neck that the sudarium touched covered with blood. This is what the cloth tells us. If we add to this the fact that the cloth has always been associated with Jesus of Nazareth, we can say that everything we have found up to now is at least perfectly coherent with what presumably happened to Jesus in the passion and death on the cross. The Oviedo cloth is *in itself* a document worthy of in-depth study. It is possible that we are only beginning to uncover all the information contained therein, so in the same way that we discovered that the body had been unexpectedly placed on its right side, we might find other things that help us to understand better what happened to the body of Jesus from an hour after his death on the cross, when the cloth was placed on his face, up till the

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<sup>19</sup> Could these datings show how useful C 14 is for dating linen? It would seem so.

time when it was taken off so that the body could be wrapped, in all probability, in the Shroud of Turin.

The idea that the Sudarium of Oviedo might be that of Jesus of Nazareth means that the investigation of the cloth should be placed in context. To do this it is essential to relate it to other documents that describe the circumstances of those times. Such too is the case of the Shroud and its geographical surroundings in Jerusalem. From the comparison of the two cloths it seems that there is a coincidence that necessarily catches the attention of anyone who studies them in depth.

It is clear that different faces can produce very similar stains, and the simple macroscopic inspection of the stains on these two cloths can only lead us to deduce that it is worth continuing the investigation. More definite information is that while the stains on each face apparently coincide reasonably well, those at the back of the head coincide too, and the blood type is also the same in both cases. Stains of blood shed in life coincide with stains of blood shed in life, and those of "post mortem" blood with their counterparts (the blood coming out of the right hand side of the mouth, the shape of the beard and the forehead). All the stains caused by sharp objects on the nape of the neck on the sudarium fit in perfectly with those in the same area on the Shroud, both being blood shed in life. This is without doubt an unexpected coincidence (Ricci could not see it as a consequence of his mistake about which part of the sudarium was in direct contact with the face), and one that reveals much. There is no other known case of a crucifixion where the victim was previously crowned with thorns. Jackson's hypothesis about the formation of the Shroud image and the sideways movement of the stains described by Lavoie and Adler (see *Biblia y Fe* no. 70) exists on the corresponding stains on the sudarium on the left front. This too is unexpected, as neither Lavoie, Adler nor Jackson know the sudarium in depth, so they were not looking for preconceived coincidences while ignoring reality. Anyone who observes the cloths will immediately perceive this. It is another question to know how to identify and evaluate it. This means an in-depth study of how the cloths were placed, which in turn means time and interest, as the majority of information we have worked with is not immediately evident.

The Shroud of Turin and the sudarium of Oviedo are two cloths that should be studied together without forgetting the individual value of each. The information obtained from one can be used to interpret the other. We think this work should be of interest to any student of the person we now call the "historical Jesus", because as we have already said on many occasions, these cloths may be documents that provide extraordinary information about the fundamental details of the historical figure of Jesus of Nazareth.

These two cloths could well be the ones found by Mary Magdalene when the first day of the week was dawning<sup>20</sup>.

Valencia (Spain), June 1998

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<sup>20</sup> John 20.

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