Preface: This paper was peer-reviewed by two scholarly history journals, *Viator* and the *Journal of Medieval History*. Neither journal suggested any major or substantive corrections. The minor amendments suggested by the peer reviewers were included in the final version of this paper.

# New Historical Evidence Explaining the "Invisible Patch" in the 1988 C-14 Sample Area of the Turin Shroud

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#### Introduction

At the Sindone 2000 Worldwide Congress in Orvieto, Italy, the authors posited that a 16<sup>th</sup> Century "invisible patch" had skewed the 1988 Carbon-14 (C-14) sample of the Turin Shroud. Many critics of this theory have scoffed at the idea of an invisible repair, as if it does not, or even could not, exist. This criticism extends even from the world-renowned textile expert, Mechthild Flury-Lemberg, who was the overseer of the 2002 restoration. In response to a communication from us, she stated that it was "technically impossible" (Flury-Lemberg, 2000). In a book about the restoration, she concluded that "reweaving in the literal sense does not exist" and confidently stated that any mend would be visible on the back side of the garment (Flury-Lemberg, 2003). She continued to pronounce publicly at the Third International Dallas Shroud Conference held 8-11 September 2005 that there is no reweave. (Her use of the term "reweave" seems to be a concession to the fact that it is a term that everyone understands and uses.)

In an email to the authors dated September 22, 2005, she further explains that,

Your paper is based on 'tapestry-reweaving' = tapestry – mending. This was of course very often done in the past, - until today. My students did it under my guidance over many years on the Burgundian Tapestries of the Historical Museum in Berne. In the case of tapestries it is no problem to make 'invisible mending.' (Invisible from the surface but easily recognisible [sic] from the back!)

In response to this assertion by Flury-Lemberg, the authors contacted the president and owner of Without A Trace, Inc. (www.withoutatrace.com) in Chicago, IL, Mr. Michael Ehrlich. Without A Trace has provided invisible mending services for over 20 years. Mr. Ehrlich's response to Flury-Lemberg's statement was that the modern-day, time-saving technique for large repairs, called "Inweaving," would indeed be invisible from the surface but easily recognizable from the back as she claimed. However, the technique used in 16<sup>th</sup> Century Europe, called "French Weaving," is an altogether different technique from Inweaving. French Weaving, now only done on small imperfections due to its extensive cost and time, results in both front and back side "invisibility." According to Mr. Ehrlich, French Weaving involves a tedious thread-bythread restoration that is undetectable. Mr. Ehrlich further stated that if the 16<sup>th</sup> Century owners of the Shroud had enough material resources, weeks of time at their disposal, and expert weavers available to them, then they would have, most definitely, used the French Weave for repairs. As will be described later in this paper, the House of Savoy, which was the ruling family in parts of France and Italy, owned the Shroud in the 16<sup>th</sup> century, and possessed all of these assets.

Recently, additional information has been discovered strongly supporting, if not verifying, the validity of the invisible patch theory. In addition to the recent publication of a peer-reviewed article by former Shroud of Turin Research Project (STURP) chemist, the late Ray Rogers, which provided compelling scientific evidence of a medieval restorative patch in the C-14 sample (Rogers, 2005), a newly-discovered confirmation of this proposed repair on the Shroud has come to light. The custodian of the Shroud's current scientific advisor, Professor Piero Savarino, co-authored a booklet on the Shroud

before he was appointed advisor to Cardinal Poletto of Turin. In the 1998 booklet, he stated that the 1988 C-14 testing might have been erroneous due to "extraneous thread left over from 'invisible mending' routinely carried out in the past on parts of the cloth in poor repair" (Savarino and Barberis, 1998: 21). Savarino went on to emphasize: "...if the sample taken had been the subject of 'invisible mending' the carbon-dating results would not be reliable. What is more, the site from which the samples actually were taken does not preclude this hypothesis" (Savarino and Barberis, 1998: 22).

Unbeknownst to us at the time of our 2000 paper, this revelation shows that Savarino knew that the art of invisible weaving was not only possible, but more importantly, was <u>routinely</u> done on the Shroud. The use of the term "invisible mending" by Savarino is significant, insofar as that was a specific technique known to have existed in the 16<sup>th</sup> century.

However, even with a plethora of compelling data, and this startling pronouncement by Savarino, it is difficult for many to believe that, indeed, this type of workmanship was possible or desirable during this earlier time period. Two important questions are "why was such a significant repair apparently undocumented?" and "why were the two missing corner sections, one of which was next to the C-14 sample area that was repaired, not enclosed during the same restoration?" The purpose of this paper is to:

1) characterize the state of the weaving art during the time period of the hypothesized C-14 sample-area patch; 2) describe the crucial role and passions for tapestries of the House of Savoy's Margaret of Austria and her nephew/ward Charles V, Holy Roman Emperor, which would have mandated an expert restoration to the Shroud following the removal of the large corner pieces; 3) to posit a plausible scenario illustrating how and why the

invisible mending on the Shroud took place around A.D. 1531, including new evidence as to why the undocumented repair took place, who was the overseer of the work, and what became of the missing corner pieces.

### **History of Weaving**

Modern-day museums abound with ornate medieval and renaissance woven tapestries, which have been meticulously restored throughout the centuries. Although weaving can in our own time be described as a "dying art," history tells a much different story about this trade and the abilities of 16<sup>th</sup> Century artisans. These masterful artisans could repair a woven textile such that the repair was virtually "invisible" to both the untrained and trained eye -- a skill that began to develop centuries before the nearly-undetectable patch was added to the Shroud.

In Europe, weaving took on a new focus as its own trade with the formation during the 12<sup>th</sup> Century of England's oldest Guild, the "Weavers Guild." Not only did these Guilds provide laws governing their trades, but they also established stringent training, or apprenticeship guidelines, along with a system for promoting an apprentice to the prestigious rank of "Master Weaver."

The prerequisite art and skills of Master weavers continued to advance throughout the medieval period. In the 14<sup>th</sup> century, the French Royal court lent their support to French master weavers and Flemish tapestry workshops. This boon in Royal support of the weaving trade ushered in what is known as "the Golden Age of Tapestry." According to one author, "During the sixteenth century the beautiful industry of tapestry-making reached almost its highest point of perfection" (Tremayne, 1908: 283).

In that very time, during the time period of 1520-1560, which we posit as including the year in which the undetected repair was made to the corner of the Shroud used for the C-14 dating, between thirty and forty master weavers were prominently known throughout France (Campbell, 2002b: 462). Most, if not all, of these weavers would have trained in the art of French Weaving and thus would have been capable of performing the invisible repairs on the Shroud.

## Margaret of Austria and the tapestry trade

Born to Maximilian I in 1480, Margaret of Austria became the Hapsburg princess and Regent of the Netherlands. After a short-lived marriage in 1497 to Infante Juan of Spain, son of Ferdinand and Isabella, Margaret wed Philibert II of Savoy in 1501. Philibert died a short time later in 1504, leaving Margaret the custodian of the Savoy collection of tapestries and, most importantly, the revered relic they believed to be the actual burial cloth of Christ, which is now known as the Turin Shroud.

It is well documented that Margaret had a passion and love of beautiful tapestries. Her private collection was formed by her own personal acquisitions along with her acquisitions through marriage with Philibert II. A biographer of Margaret wrote, Encouraged by Margaret, a brilliant group of artists, poets, and literary men settled at her Court at Malines. Merchants from England, Spain, France and Italy attended the great fairs, and traded in arms, embroideries, tapestries, velvets, satins, cloth and leather goods (Tremayne, 1908: 273).

According to Thomas Campbell, medieval and renaissance tapestry expert, who is

Associate Curator of European Sculpture and Decorative Arts at the Metropolitan

Museum of Art in New York City,

Margaret . . . exercised an important influence over the development of the Netherlands tapestry industry during a crucial phase of its development. Although she lacked the funds that her ancestors had enjoyed, Margaret evidently shared their love of the tapestry medium, ensuring the careful preservation of the inherited Burgundian collection during her reign and developing a small but interesting collection of her own (Campbell, 2002b: 138).

Margaret's devotion and support of the tapestry industry had a strong influence on Charles V. Campbell notes,

With Maximilian's death in 1519 Charles's inheritance was complete, and he was elected Holy Roman Emperor Charles V in June 1519. Raised in Mechelen under the tutelage of their aunt Margaret of Austria, Charles and his siblings grew up close to the center of high-quality tapestry production, and Margaret was herself an active tapestry patron. With this example before him, Charles seems to have been finely attuned to the tapestry medium, taking far greater interest in it than in any of the other arts, and spending much more money on it (Campbell, 2002b: 267).

Nothing reflects this statement more accurately than touring the current-day Savoy Palaces in Turin, which the authors did in 2000. One cannot help but describe the magnificent tapestries seen throughout the Palaces as "opulent," "lavish," and "ornate."

Margaret had in her inventory of goods "La pourtraiture du sainct suaire de NS.

Fetes en toile," ["The portrait of the Holy Shroud of Our Savior done on a towel {or cloth}]," (Tremayne, 1908: 319). After her death, at which time we propose the invisible mending was done in accordance with her last will and testament, the most skilled person available in her Court would have undoubtedly been commissioned to do the repairs.

The most famous tapestry-worker of this period was Pieter van Aelst, who produced numerous tapestries for more than thirty years (Tremayne, 1908: 283). It was his tapestry workshop that was entrusted to produce nine tapestries used at the coronation of the Holy Roman Emperor Charles V, Margaret's nephew and ward (Delmarcel, 2000). It is possible that repairs on the Shroud were entrusted to van Aelst. This desire to repair the

Shroud to its original aesthetic quality was unquestionably within the reach of Charles V and his court weavers at the time. Campbell has noted that,

"All of the major European courts had teams of skilled weavers and embroiderers who were employed in the repair of high-quality textiles" (Campbell, 2002a).

But was such an undetectable repair, as has recently been demonstrated to have possibly occurred in the corner of the Shroud, within the capabilities of the 16<sup>th</sup> Century master weavers? According to Campbell, ". . . the sixteenth century weavers were magicians" (Campbell, 2002a).

In our original paper from 2000 regarding the 16<sup>th</sup> century patch, we posited that: "It is our premise that the reinforcement with 16<sup>th</sup> Century material occurred following the removal of the 5½ inch x 3½ inch section of cloth adjacent to the C-14 sample" (Marino and Benford, 2000: 60). One of the greatest Shroud mysteries still existing today pertains to the two missing corners of the Shroud and the whereabouts of the extracted corner pieces. No historical documentation exists recording the removal of these large corner areas and/or the benefactor of the relics, which in and of itself is highly curious and suspect.

We propose that the two corners were removed in compliance with the will and testament bequeath, drawn up on February 20th, 1508, by the Duchess of Savoy, Margaret of Austria, who wanted to leave the Shroud to bolster her fledgling church and monastery, St. Nicholas, in Brou. In her will, she states, "I give to my church St. Nicholas all the holy relics that I have now and will have on the day of my death, the piece of the Holy Cross, the Holy Shroud, bones of saints that I have and will have on my death, and which could decorate the church" ([Wilson], 2000: 43). (Note that she did not

will just a piece of the Shroud but apparently the whole cloth.) However, as history records, the St. Nicholas church in Brou never received the Shroud or even a piece of the cloth. One wonders what became of such a large number of Margaret's treasures and pictures. An examination of Margaret's inventory at the Brou church in 1533 revealed that many of the bequeathed religious items were missing (Tremayne, 1908: 326).

To unravel the mystery of the missing corner pieces, as well as the other missing items from Margaret's inventory, it is imperative to understand the dynamics at play during and immediately following Margaret of Austria's lifetime. Margaret's main passion in life was to fulfill the deathbed request of her beloved husband Philibert of Savoy, which consisted of building a church in Brou and rebuilding the ruined Benedictine monastery. Her husband's request stemmed from a commitment and promise made by Philibert's mother, Margaret of Bourbon, which had never been executed. This solemn promise made by Margaret to Philibert became Margaret's primary goal and obsession throughout her life.

Her passion and dedication to this project was not shared by her counselors or family. In fact, her plan and expenditures on the project were vehemently opposed by her counselors, one of whom was Laurent de Gorrevod, Governor of Bresse and brother of then-Bishop (later Cardinal) Louis de Gorrevod, who had been closely associated with the Savoy family for over 40 years and performed the wedding of Philibert and Margaret. Laurent knew how expensive the Brou church construction endeavor would be as he had helped Margaret draw up the building plans. Laurent Gorrevod, and Margaret's other counselors, tried desperately to convince her that her money would be better spent on

restoring the already-begun Notre Dame church in Bourg instead of the monastery church in Brou. Margaret's biographer Tremayne wrote,

They [Margaret's counselors] then pointed out that in the church of Notre-Dame de Bourg there was a very fine beginning, and that if it pleased her to employ what she wished to spend on this monastery, she would have the prayers of ten million people, for everyone in Bourg goes once a day to pray in the said church of Notre-Dame (Tremayne, 1908: 54-55).

Despite her counselors' fervent requests, Margaret refused to switch her allegiance and resources from the fledging Brou project to the more regal and esteemed Notre Dame church, which remained only partially complete during Margaret's lifetime.

Furtherance of the church's restoration and continued construction became an even bigger concern for Louis de Gorrevod on April 16, 1530, when he accepted a position at Notre Dame as a newly-appointed Cardinal per the edict of Pope Clement VII, with whom, unlike Charles V and the Pope, he shared a very close relationship. As fate would have it, at the end of 1530, when Margaret died, Louis de Gorrevod, was the appointed ambassador of Savoy and placed in charge of all matters related to the church in the region. Thus, following Margaret's death in November 1530, Cardinal de Gorrevod, who it is known had oversight of all Shroud restorations after the 1532 fire, also would have overseen the acquisition and transference of all the bequeathed holy relics to Bourg, where his brother governed and where he served as Cardinal.

As previously mentioned, Margaret's will had actually dictated that the entire Holy Shroud be given to her church in Brou upon her death. Without question, this would have been an untenable option for Charles V, who had only recently established a truce with the much maligned and hated Pope Clement VII, whom Charles had once held as his prisoner. Additionally, as also previously alluded to, Charles' and Margaret's other

family members from the House of Savoy, lacked the same support and interest in Margaret's still unfinished church at Brou. Thus, giving Brou the Savoy's most precious and prized religious relic would have been non-negotiable. Instead, we posit that Cardinal de Gorrevod and Charles V reached an agreement to excise two corner pieces of the Shroud for transference to the church in Brou. This would satisfy Margaret's desire to support her church with a prestigious relic while leaving the nearly-complete relic in the hands of the Savoy family.

With Margaret's death and generous bequeath, the two Gorrevod brothers were faced with both a dilemma and an opportunity. The dilemma was how to complete the Brou church of St. Nicholas without Margaret's ongoing financial support while the opportunity lay in the newly-acquired valuable possessions and relics that Margaret had left to her church in Brou that now fell under the jurisdiction of the Gorrevod brothers.

During her lifetime, Margaret had denied requests to finance the Gorrevods' first love -- the church of Notre-Dame de Bourg. Following Margaret's death and with the Gorrevods controlling Margaret's religious estate, the path was clear for the brothers to use some of Margaret's assets to further the development of Notre Dame as well as to complete the church in Brou as she had dictated.

It is reasonable to assume that Cardinal Gorrevod used the proceeds he and his brother received from donations obtained from the distribution of Margaret's relics for purposes not outlined in her will; thus, the removal of the Shroud corners, as well as the invisible repair, would have understandably not been documented. It bears stating that, even though the Gorrevods may not have been following the explicit intent of Margaret's bequeath as to how her religious relics should be disposed, they may have been acting in

accordance with the best interests of the Catholic Church and Margaret's subjects by distributing her valuables to raise funds for purposes beyond her sole interest in Brou. (A modern example of this kind of action was the recent news that Pope John Paul II's private secretary ignored his wish that all of his private papers be destroyed because the secretary maintained that the documents were a "great treasure" and should be kept [http://www.wwrn.org/parse.php?idd=10125&c=98].) Although it is impossible to estimate how much money the Gorrevods might have raised from the distribution of Margaret's many relics, including pieces of the Shroud, a 1993 auction of two splintersize pieces of the "true cross" sold for \$18,000 (Sora, 2005: 57).

In order for the Gorrevods to authenticate to donors that the pieces they were receiving came from the Shroud, it would have been necessary for the two corner panels to remain missing following their removal. It would have been a simple process for the master weaver performing the invisible repair to the edges of the excised corners to enclose the entire corner sections. However, had the area next to where the C-14 sample was removed been completely enclosed along with the repair to the edges, then potential donors would have rightfully been skeptical that they were obtaining an actual piece from the Shroud. Whether it was for an individual donor or for the Brou church, it was essential to authenticate that the bequeathed corners were part of the original Shroud, in light of the abundance of false relics in circulation at the time. In other words, fully restored corners would have given the impression that the Shroud relics could not have actually come from an intact Shroud; thus, the corners were left missing to insure those who had made donations for their relics/reliquaries had received an authentic piece of the cloth.

If this scenario is plausible, then there should be examples of large expenditures by the Gorrevod brothers following the distribution of Margaret's relics. In fact, in May 1531, just a few short months after Margaret's death, both Louis and Laurent were acknowledged for the large contributions they made for the construction of one of the Notre-Dame de Bourg chapels. The brothers received a triumphal reception in Bourg, at which time the Cardinal celebrated High Mass in the market square instead of at the church due to the extremely large crowd that had assembled to honor the Gorrevods ("Notice sur quelques figures remarquables de Notre-Dame"). Additionally, the St. Nicholas church in Brou was finally completed a few short months later in March 1532 (Tremayne, 1908: 294), as was the building of multiple ornate bronze tombs for Laurent de Gorrevod and his family at Brou (Tremayne, 1908: 299-300). Clearly, some unnamed revenue source had been tapped by the Gorrevod brothers preceding the May 1531 event that would have permitted the completion and/or commission of these costly projects.

In addition to the sudden influx of monetary resources by the Gorrevods immediately following Margaret's death, there is also evidence that Cardinal Gorrevod came into possession of a finger bone belonging to Saint Landry. The worship of Saint Landry commenced in 1532 when Cardinal Gorrevod put the last phalanx of the little finger of the saint's left hand in the main altar of the sacristy of the Lanslevillard church (<a href="http://www.landrystuff.com/st\_landry.htm">http://www.landrystuff.com/st\_landry.htm</a>). It should be noted that Margaret willed unspecified bones of saints to her church, which may explain where Cardinal Gorrevod obtained the finger bone of St. Landry.

It is plausible that the holy relics along with several other valuable religious items from Margaret's estate were distributed by the Gorrevods to raise money for the two

church projects and, possibly, to fund other ventures as well. Several items listed in Margaret's inventory of religious relics, including the Shroud pieces, were never located by the Brou church officials and remain missing to this day.

It may not be a coincidence that following the brothers' expenditures and relic donations given to the Gorrevods in 1531 and 1532, the Shroud was nearly destroyed by fire in December 1532. Was this vandalism due to Protestant outrage over substantial donations for the Shroud, which were strengthening Catholic efforts against the Reformation? According to one researcher,

In 1532, Protestant revolts took place in Duke Carlo II's territories in Lausanne and Vaud. That same year, the Holy Shroud was damaged in a fire at the Saint Chapelle in Chambèry—a fire that many Catholics in the capital city of the House of Savoy believed was started by Protestant extremists (Homer, 2000).

#### Conclusion

Our theory, alluded to and tested by Ray Rogers, is that an "invisible patch" of material, from the 16th Century, was skillfully spliced into the 1st Century original Shroud cloth in the C-14 sample used by the laboratories for testing; thus, altering the date to make it appear more modern than the main Shroud. In our original paper, several supporting arguments and testable hypotheses were presented -- many subsequently confirmed by both Rogers and by other independent sources.

Following several years of rigorous scientific research on fibers from the Shroud, Rogers published his findings in the prestigious peer-reviewed journal *Thermochimica Acta*. Rogers explained that,

The presence of alizarin dye and red lakes in the Raes and radiocarbon samples indicates that the color has been manipulated. Specifically, the color and distribution of the coating implies that repairs were made at an unknown time with foreign linen dyed to match the older original material. Such repairs were suggested by Benford and Marino (Rogers, 2005: 192).

Additional significant supporting evidence and background for our theory can be found in three other papers published on the World Wide Web (Benford and Marino, 2002a and 2002b, Brown, 2005, *et al.* \*see note below) as well as from the acknowledgement by Savarino that not only was the Shroud invisibly mended, but it was routinely done.

Rogers concluded,

The combined evidence from chemical kinetics, analytical chemistry, cotton content, and pyrolysis/ms proves that the material from the radiocarbon area of the shroud is significantly different from that of the main cloth. The radiocarbon sample was thus not part of the original cloth and is invalid for determining the age of the shroud (Rogers, 2005: 193).

To simply summarize the significant scientific findings supporting our theory would fall short of telling the full story of the misdating of the Turin Shroud. The tragedy of the ill-fated 1988 C-14 dating is, in one respect, the tragic result of an ill-fated love story. The few short but blissful years Margaret of Austria had with her one true love set in motion a lifetime mission to fulfill her beloved's dying request to build a church in Brou. Towards this all-encompassing quest, Margaret bequeathed the ultimate of religious relics, the Holy Shroud, to propel her fledging church to a status surpassed by no other. Albeit, in one respect, a portion of the Holy Shroud ultimately helped her church towards its completion, it never housed the relic as she had envisioned.

Unbeknownst to Margaret, or those of her time, her very unselfish act to bequeath the Shroud, accompanied by a meticulous and nearly invisible restoration undertaken to display that the relic portions were authentic, would, ironically, centuries later nearly destroy the authenticity of the Shroud, insofar as that invisible restoration, combined with leaving the missing corner, led to the questionable C-14 dating in 1988. Both the recent

scientific and historical findings have resurrected the possibility that Margaret's Holy Shroud is indeed the burial cloth that covered the body of Jesus.

However, as with all aspects related to the study of the Turin Shroud, additional confirmatory testing is still necessary to ultimately determine its true age and to finally unravel the mystery behind its origin and image.

\*STURP image analyst Jean Lorre indicated to STURP photographer Barrie Schwortz in 2003 that the ultraviolet fluorescence photography of the C-14 sample area shows differences from the main part of the cloth, indicating differences in chemical composition. The picture of this area and full explanation is currently only on a restricted Internet site. In addition, longtime Shroud researcher Dr. Alan D. Whanger presented at the Third International Dallas Shroud conference in 2005 x-ray photos of various anomalies of the C-14 sample area.

#### References

Benford, M.S. and Marino, J. 2002a. Textile Evidence Supports Skewed Radiocarbon Date of Shroud of Turin. <a href="http://www.shroud.com/pdfs/textevid.pdf">http://www.shroud.com/pdfs/textevid.pdf</a>

Benford, M.S. and Marino, J. 2002b. Historical Support of a 16th Century Restoration in the Shroud C-14 Sample Area. http://www.shroud.com/pdfs/histsupt.pdf

Brown, J. Microscopical Investigation of Selected Raes Threads From the Shroud of Turin. http://www.shroud.com/pdfs/brown1.pdf

Campbell, T.P. 2002a. Personal communication, April and May.

Campbell, T.P. 2002b. Tapestry in the Renaissance: Art and Magnificence. New Haven and London: Yale University Press.

Delmarcel, G. 2000. Los Honores: Flemish Tapestries for the Emperor Charles V. Pandora: Snoeck-Ducaju & Zoon.

Flury-Lemberg, M. 2000. Personal communication. November.

Flury-Lemberg. M. 2003. Sindone 2002. Torino: ODPF.

Homer, M.W. "Like the Rose in the Wilderness": The Mormon Mission in the Kingdom of Sardinia. Mormon Historical Studies, Volume 1, Number 2, Fall 2000. Retrieved 7 June 2005 from the World Wide Web:

http://www.mormonhistoricsitesfoundation.org/publications/studies\_fall2000/mhs1.2Ho merFall2000.pdf.

Marino, J and Benford, M.S. 2000. Evidence for the Skewing of the C-14 Dating of the Shroud of Turin Due to Repairs. In Sindone 2000: Congresso Mondiale-Worldwide Congress 27-29 August 2000 in Orvieto, Italy. San Severo: Gerni Editori, 2002; 57-64. Also accessible at <a href="http://www.shroud.com/pdfs/marben.pdf">http://www.shroud.com/pdfs/marben.pdf</a>

Rogers, R.N. 2005. Studies on the Radiocarbon Sample of the Shroud of Turin. *Thermochimica Acta*, Vol. 425, No. 1/2, 20 January 2005; 189-194.

"Notice sur quelques figures remarquables de Notre-Dame." Retrieved 13 May 2005 from the World Wide Web: <a href="http://catholique-belley-ars.cef.fr/page\_organisationdiocese/ecran\_notredamebourg500notice.htm">http://catholique-belley-ars.cef.fr/page\_organisationdiocese/ecran\_notredamebourg500notice.htm</a>.

Savarino, P. and Barberis, B. 1998. Shroud, Carbon Dating and Calculus of Probabilities. London: St. Paul's.

Sora, Steven. 2005. Treasures from Heaven: Relics from Noah's Ark to the Shroud of Turin. Hoboken, New Jersey: John Wiley & Sons.

Tremayne, E.E. 1908. The First Governess of the Netherlands: Margaret of Austria. New York: G.P. Putnam's Sons, London: Methuen & Co.

[Wilson, I.] 2000. "Whatever Happened to Margaret of Austria's 'Shroud relic' Bequest?" British Society for the Turin Shroud Newsletter, June, pp. 42-43.