

CAERDROIA

THE JOURNAL OF
MAZES & LABYRINTHS

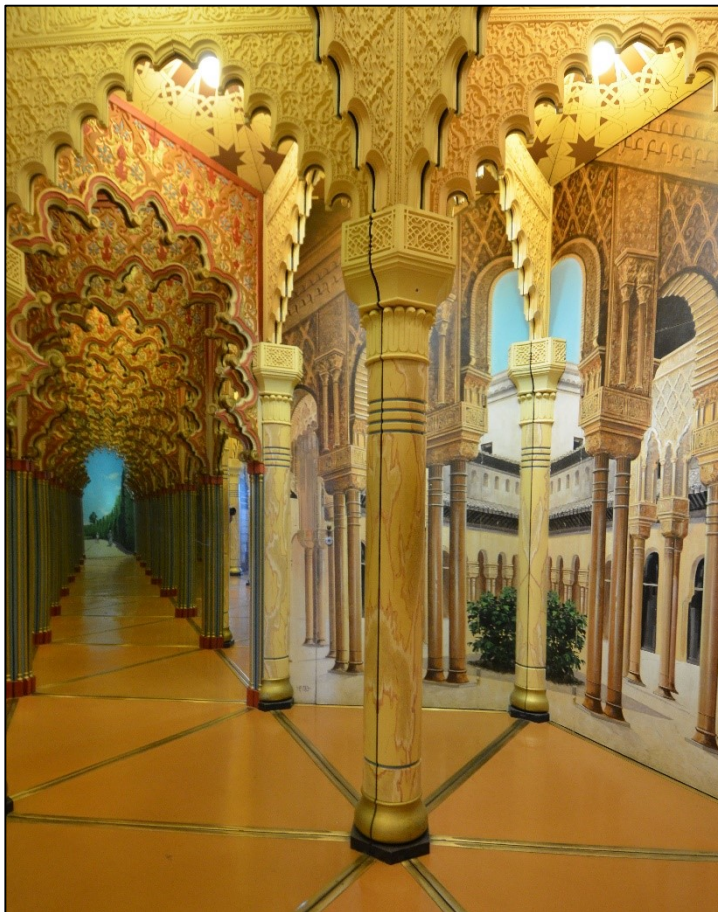


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The Journal of Mazes & Labyrinths

45th Edition



The mirror maze at the Gletschergarten, Lucerne, Switzerland. Originally constructed for the 1896 Swiss National Exhibition in Geneva, the maze was subsequently moved to the Metropol in Zurich and then reassembled in 1899 at the Gletschergarten, where it remains to this day.

Photo: Jeff Seward, November 2015

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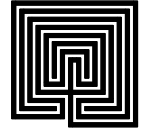
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Caerdroia 45 was produced during February and March 2016 by Jeff and Kimberly Saward at Labyrinthos HQ. Opinions stated by contributors are not always those of the editors, but *Caerdroia* welcomes open discussion and endeavours to provide a forum for all who are lured by the labyrinth.

Editor & Publisher: Jeff Saward – Associate Editor: Kimberly Lowelle Saward, Ph.D.

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Jeff Saward, Thundersley, March 2016

Welcome to the 45th edition of Caerdroia. This edition is effectively ‘book-ended’ with items on two church labyrinths, one an old favourite, the other a ‘new’ discovery, from the late 19th and early 20th centuries – a period that spawned a number of labyrinths in connection with building projects, both sacred and secular, at the time. These labyrinths of the so-called “Gothic Revival” remain poorly documented and surprisingly little known. In recent years I have been travelling extensively to complete my study of them, and in a forthcoming edition of *Caerdroia* I will present a catalogue of the Gothic Revival labyrinths, and provide them with the recognition they deserve.

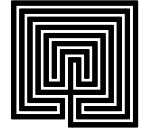
Our next edition, Caerdroia 46, is scheduled for publication in spring 2017. As always, if you have a paper or shorter article you wish to submit for inclusion in the next edition, send it to me as soon as possible, along with the usual labyrinthine snippets and curios that help fill the pages...

Jeff Saward, e-mail: jeff@labyrinthos.net – website: www.labyrinthos.net



The “House of Theseus” Roman mosaic, Paphos, Cyprus. Photo: Jeff Saward, March 2015

The Itchen Stoke Labyrinth



Jeff Seward

The delightful little church of St. Mary's in the Hampshire village of Itchen Stoke, between Winchester and Alresford in southern England, is now redundant and maintained by the Churches Conservation Trust. A grade II listed building, it contains one of the more interesting labyrinths constructed during the latter half of the 19th century, at the height of the Gothic Revival period.

The current church stands on the site of an earlier building that was built in 1830-31 to replace a dilapidated medieval church nearby. When Charles Ranken Conybeare became the vicar of the parish in 1857 he complained that the church was cold and damp, and obtained consent for the demolition of the building and the construction of another new church. Built in 1866-67 (this year therefore marks the 150th anniversary of its founding) the church was designed by his brother, the architect Henry Conybeare, designer of the church of St. John the Baptist and various other municipal works in Bombay (now Mumbai), India, before he returned to work in London in the late 1850's.



St. Mary's, Itchen Stoke. Photo: Jeff Seward

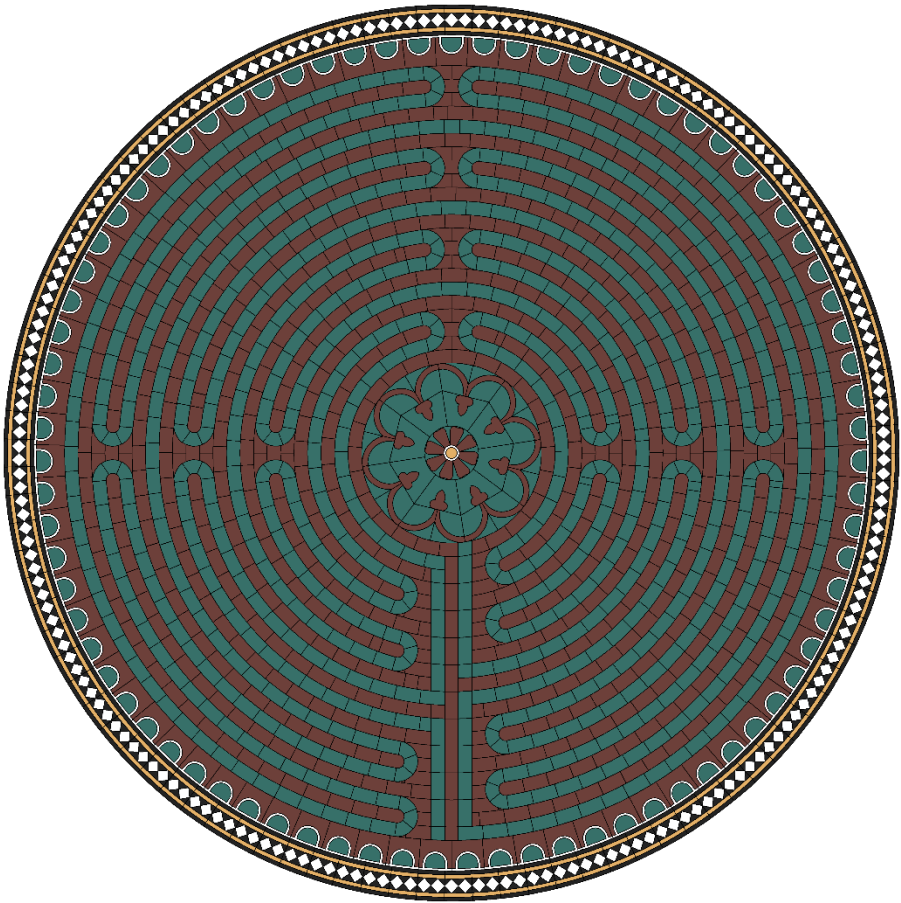
Conybeare's design for St. Mary's at Itchen Stoke was clearly inspired by the Sainte Chapelle in Paris, itself restored back to its former medieval glory in 1855, following the serious damage it sustained during the French Revolution. It has also been suggested that the chapel at Exeter College, Oxford, built 1856-59 to a design by George Gilbert Scott (who would subsequently install the labyrinth in Ely Cathedral) was also influential, and C.R. Conybeare was the vicar at nearby Pyrton until he came to Itchen Stoke. An article describing the new church at Itchen Stoke was published in *The Builder* in February 1868, shortly after the church was consecrated, and mentions various European cathedrals as the inspiration for particular details within its walls. The interior is notable for its long, tall nave and rose window above the west entrance, and of particular interest to us here, for its chancel with elegant windows and circular floor at the east end. Covered with glazed tiles, the floor is laid in the form of a labyrinth, although it is usually difficult to appreciate the full design, due to the wooden altar that stands at its centre. Another very similar note published in the *Building News*, again in 1868, refers to the pavement as "a modified reproduction, in glazed green and chocolate tiles, of one of the concentric labyrinths (called heavenly Jerusalem) that so frequently occur in the pavement of early French cathedrals."

Recent restoration and cleaning work at the church necessitated the temporary removal of the altar, thus allowing a rare opportunity to photograph the labyrinth in its entirety and to study the details usually hidden from view. A little over 16½ feet, 5.1 metres, in diameter, in total around 1610 tiles were utilised in the construction of the labyrinth, and while a few now have cracks and other superficial damage, the tiling has survived 150 years in surprisingly good condition, undoubtedly because it receives little foot traffic. Close examination reveals that while some of the tiles employed in its construction were surely designed specifically for this project, especially those used in the central rosette and the outer halo, the intricate design has been executed with a surprisingly limited number of basic pieces – most of the tiles are simple 6 x 3 inch units, in either brown or green – but the careful layout and attention to detail prove this to be the work of a skilled tiler.



The tiled labyrinth. Photo: Jeff Saward

The design of the Itchen Stoke labyrinth, while by no means a slavish copy, is based directly on the famous labyrinth in Chartres Cathedral, complete with a rosette at its centre and an outer perimeter that imitates the scalloped border of ‘cusps’ or ‘cogs’ around the original labyrinth at Chartres. There are 79 of these cogs surrounding the labyrinth at Itchen Stoke – an unusual number that was probably the result of the requirement for creating a tile of convenient size, which could then be laid evenly around the perimeter without the need for cutting. Likewise the unusual treatment of the central rosette, with eight, rather than six-fold division, also allowed the otherwise complex central panel of 25 tiles to be created with just four different tile designs, two of which are merely the mirror image of each other.



Plan of the Ichen Stoke labyrinth. Artwork: Jeff Seward

The precise source of the designs employed for these 19th century ‘replicas’ of the medieval cathedral labyrinths, at Ichen Stoke and elsewhere, can sometimes be determined by reference to the various published plans of labyrinths available at the time. Several of the 19th century paved copies of the St. Omer labyrinth contain specific errors that can be traced back to an incorrect engraving published in several popular books. In the case of the Chartres labyrinth, all of the plans published during the 19th century are notoriously unreliable concerning correct details of the outer perimeter and the central rosette. Wallat’s diagram (first published in 1834) depicts 57 cogs around the outer perimeter, De Caumont (1850) gives 59 and Gailhabaud (1858) ups the count to 60. Amé (1859) provides 102 on his illustration, and is the only one to come anywhere near close to the 113 that decorate the original at Chartres.



Various published renditions of the Chartres Cathedral labyrinth design

top left: Wallet (1834)

top right: De Caumont (1850)



lower left: Gailhabaud (1858)

lower right: Amé (1859)



Wallet's diagram was subsequently reproduced in Trollope's influential *Notices of Ancient and Medieval Labyrinths* paper (published in various journals from 1858 onwards) that brought many of these labyrinths to the attention of an English readership. This may well have been the source of the labyrinth of very similar design (with 57 cogs) inlaid in marquetry on the wooden cabinet created by John Pollard Seddon and shown at the London International Exhibition in 1862.

Inlaid labyrinth (one of two) on a wooden cabinet created by J.P. Seddon, c.1860-61, and now displayed in the Victoria & Albert Museum in London

Photo: Jeff Saward, courtesy of the V&A





*The chancel of St. Mary's Church,
Itchen Stoke, Hampshire*

Photo: Jeff Saward

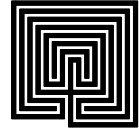
However, no such direct model would seem to exist for the unique 79-cog tiled labyrinth at Itchen Stoke; its precise form was surely the work of its architect, George Conybeare, who created his own “modified reproduction” of the Chartres design. With its striking geometric design and colourful tiles, set in front of the stained glass that fills the chancel with both light and colour, the little labyrinth at St. Mary's is without doubt one of the jewels to be found amongst the Gothic Revival labyrinths of late 19th and early 20th centuries.

Jeff Saward, Thundersley, England;
March 2016

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The Labyrinth of St. Petronio in Bologna, Italy



Giancarlo Pavat

The Italian sundial enthusiast and manufacturer Giovanni Paltrinieri recently informed me of an interesting small labyrinth in the pavement of the famous basilica of St. Petronio in Bologna, Italy. The basilica, dedicated to St. Petronio (the Bishop of Bologna in the 5th century CE), is the principal church of Bologna, although contrary to popular opinion, it is not its cathedral – that honour goes to the baroque St. Peter's.

St. Petronio overlooks the great Piazza Maggiore square at the heart of Bologna, and standing 132 meters long and 60 wide, with a ceiling height of 44.3 meters and a façade 51 metres high, is the sixth largest church in Europe. The construction of the church started on June 7, 1390, with the laying of the foundation stone during a solemn religious ritual. It was the last great Gothic church built in Italy. In 1530, the basilica was the site of the historic crowning of Emperor Carlo V of Absburg by Pope Clemente VII, the last time a Holy Roman Emperor was crowned by a Pope. St. Petronio is also famous for its 'unfinished' façade, 60 meters wide and 51 meters high, it is characterized by division into two well-marked horizontal bands. The lower half is clad with polished marble, while the upper half still reveals the original exposed brickwork.

Inside, the basilica is richly decorated and adorned with artistic masterpieces. Inlaid in the paving of the left aisle of the nave is the *Meridiana Cassini*. Created by the Italian astronomer Giovanni Domenico Cassini in 1655, this scientific measuring device was used to determine the length of the solar year with considerable accuracy. A total of twenty-two chapels are situated within the building, and the chapel of St. Sebastian (formerly the chapel of the Vaselli family) is renowned for its works by Lorenzo Costa Ferrara and Francesco Raibolini depicting the Apostles and the Annunciation, surrounding the central altarpiece of the martyrdom of Saint Sebastian.

The floor of this chapel is most remarkable; it was created in 1487, as evidenced by the date that appears on one of the thousands of hexagonal polychrome tiles that form the pavement. The tin-glazed faience tiles are true works of art, produced in the great artistic tradition of Faenza majolica. An inscription on another - *Petrus Andrea de Favencia, ucellarius et seu pictor faventinus* - indicates the author of this work, Pietro d'Andrea from Faenza, also known as Pietro Andrea Sellini.



*Part of the floor of the St. Sebastian
(Vaselli) Chapel, St. Petronio, Bologna.
Photo: Giovanni Paltrinieri*

The floor tiles feature a mix of iconographic symbols popularised by the Faenza ceramic industry. It is possible to recognise geometric patterns, rosettes, spirals and hexagrams, broken hearts and shaking hands, birds, animals and mythological beasts, and various types of flowers and plants. Set among this medley is one tile featuring a labyrinth, which along with all the other tiles must date from 1487.

At first glance, the labyrinth looks like a familiar Chartres-type, but closer examination reveals some differences in the arrangement of the pathway. It is unicursal with twelve orange walls painted on a paler buff background. At the centre is a small green circle containing a cross. The outer corners of the hexagonal tile and the entrance leading into the labyrinth are painted green.

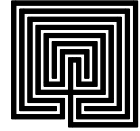
How might we interpret the presence of this labyrinth, which due to its reduced size cannot have been a physical pathway? A clue may come from analysis of the decoration on some of the accompanying tiles that seem to be related to the subject of alchemy. This early form of chemistry was very fashionable in the Italian Renaissance and maybe a member of the Vasselli family who commissioned the chapel was a student of this matter? If so, this small labyrinth could be a specific reference to a spiritual path, one that Man must take to free himself from the bonds of brute matter, to reach the elevation of the spirit.

Giancarlo Pavat, Rome, Italy; July 2015



Labyrinth floor tile, St. Petronio basilica, Bologna, Italy. Photo: Giovanni Paltrinieri

Labyrinth Doorways: Crossing the Threshold



Alain Pierre Louët & Jill K. H. Geoffrion

The threshold that one crosses upon entering and leaving a labyrinth is seldom emphasized in contemporary labyrinth discussions. While the pathway and centre are universally accepted as important components of ancient and modern labyrinth designs, the doorways of labyrinths have recently attracted far less attention than they did historically. When studying ancient labyrinths of all types, including those found on Greek calyxes, as Roman mosaics, in medieval parchment manuscripts from both the East and West, and etched or carved as stone church labyrinths from the same period, it is easy to see that literal and symbolic doorways were respected as integral elements that gave meaning to the whole. In this article we will consider the symbolism of thresholds, the doors and doorways found within labyrinth designs, and ways in which labyrinths can be understood as symbolizing passage. Implications for modern labyrinth discussion and practice will also be considered.



Gated labyrinth in a Persian manuscript, c.1350

Photo: courtesy of the Berlin State Library - Prussian Cultural Heritage; 344, folio 167v

Thresholds

Before examining the doorways of labyrinths, let us consider the general symbolism of passageways, beginning with a consideration of the point of entry or exit. Thresholds mark the change from one place or one state to another and therefore represent both possibility and danger. It is not surprising that respect of boundaries is universal. As Ulyatt notes in *“Gestures of approach”: aspects of liminality and labyrinths*, “A threshold constitutes a boundary line or marginal area... from which a movement inward or outward may be inferred, even if not necessarily pursued....”¹

The metaphysical concept of a line that separates one thing from another was anchored in traditional thinking, but seems alarmingly absent in the modern era. A threshold was often manifested very concretely by an actual board or stone that differed from those that surrounded it. The materialization of thresholds is inherent to the vocabulary that has been used to describe them. For example, “*Schwelle*,” the German word for this place of passage most likely comes from an Indo-European root, *sel*,² or from the description of an unusual block of stone whose color or hardness is remarkable.

Since the crossing of a threshold implies change, even conversion, Rudolf Otto has written about how the relationship of the religious impulse within humanity manifests in perceptions of entering into the presence of the sacred. Perceiving the Mystery (*mysterium*), involves fear; it is terrifying (*tremendum*) and fascinating (*fascinans*) at the same time.³ A respect for sacred thresholds and their potential for metamorphosis can be found throughout history and around the globe. For example, in Japan the threshold of a *torii*, a traditional gate that marks an immaterial line at the entrance to a Shinto shrine, is crossed with intentional reverence for the passage from the profane to the sacred. Mircea Eliade writes about the importance of boundaries around sacred places noting that among other things they, “serve the purpose of preserving profane man from the danger to which he would expose himself by entering without due care. The sacred is always dangerous to anyone who comes into contact with it unprepared, without having gone through ‘the gestures of approach’ that every religious act demands.”⁴ Hein Viljoen and Chris Van der Merwel, contemporary South African authors, echo the wisdom of the ages, “By virtue of their very intermediacy, [thresholds] may possess ‘strong transformative powers.’”⁵

Access and Transitional Space

There is a long history of marking both physical and temporal thresholds. For example, images of two-headed Janus,⁶ the Roman God of thresholds, beginnings, and transitions were often placed by doorways and gates.⁷ Later, images of Janus were used in medieval Christian buildings signaling the passage of the seasons and the months of the calendar. They were often placed near doorways.⁸ Many medieval rituals took place at the doorways of churches including those held on Palm Sunday,⁹ Easter,¹⁰ at church dedications, during public penitence, marriage celebrations, baptisms, and funerals. Respect for entryways as holding the possibility of transformation has continued. During this Year of Mercy,¹¹ Pope Francis explained the Doorway of Mercy with its symbolism of passage including the choice to enter and the necessity of leaving something behind.

A holy door or *porta sancta* has been used since the fifteenth century as a ritual expression of conversion. Pilgrims and penitents pass through it as a gesture of leaving the past behind and crossing the threshold from sin to grace, from slavery to freedom, and from darkness to light.¹²

Doorways remind us that not all space is “homogenous.”¹³ The importance of entryways has meaning far beyond simply allowing access. For example, the tympana above European Romanesque church doorways showed the resumé of all the church represented,¹⁴ and were lined up directly with the center of the sanctuary. The doorway represented the Church, which in turn represented the Transcendent.¹⁵

Doors

While thresholds mark specific places of change, and entryways facilitate movement across a zone of change, doors make it possible or impossible to enter or leave a place. A door is always in relationship with what surrounds it, providing passage through a barrier, or, if it can not be opened, making movement through the obstacle impossible. An open door may imply welcome, an invitation to investigate, the possibility of discovery, or opportunity. A closed door, especially if it has a lock, may symbolize protection, imprisonment, exclusion, or secrecy. A partially opened door may evoke risk, danger, freedom, or adventure. As one opens or shuts a door awareness is brought to the change that is being experienced as one moves from one domain to another.¹⁶ In earlier times, ungoverned by the modern value of speed, attention to transitions was normative, happening with greater intention and respect.

Rites of Passage and Modern Anxiety

Respect for thresholds of all types allowed our predecessors to focus their anxiety during potentially dangerous moments of passage, and to be able to regroup afterwards. In the modern societies where it is normative to rush through everything, including key moments of passage, constant anxiety has become epidemic.¹⁷ There is a growing recognition for the need to slow down and acknowledge the small and large passages that mark our existence. New rites of passage have begun to spring up, helping people to cope with life transitions including thresholds of birth, puberty, marriage, and death. Finding greater meaning and peace is the main subject of many contemporary works that describe and discuss these rituals.¹⁸ For those interested in using the universal symbol of the labyrinth to address these needs, consideration of historic examples of labyrinth doors and doorways can help.

Labyrinths and Doorways

Labyrinth designs have the three essential elements, an entrance/exit that allows passage from the outside and inside, the pathway (and its corresponding dividers) that allow movement, and the centre. Our interest here is the specific area of transition found at the edge of all labyrinths, what the French call the *porte*, which includes literal and symbolic meanings. In English it is necessary to speak of this area as including one or more of these elements: threshold, doorway, and door.

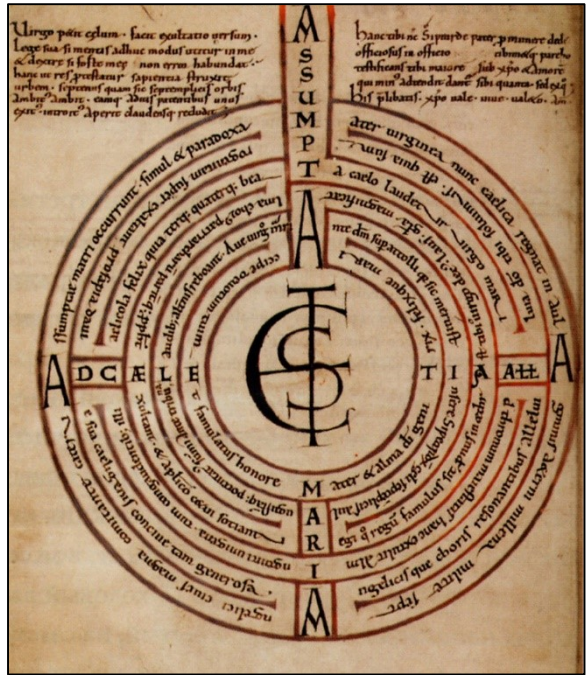
No actual door allowing access or inhibiting exit is mentioned in the Greek labyrinth myth. Nonetheless, the doorway was essential for entrance and escape. In order to leave the labyrinth, Theseus needed Ariadne's thread to lead him back to the threshold from which he could leave the prison. On two Greek drinking bowls from the first half of the 5th century BCE Theseus is shown dragging the Minotaur out of a doorway that represents the labyrinth.¹⁹ A similar image was found in the third century polychrome Roman mosaic in Tripoli, Libya.²⁰ We are reminded here of Burckhardt's idea of the door symbolizing all that is within.

The idea that the opening in a labyrinth serves as both an entrance and an exit is inherent in the symbol itself. When viewed as a two-dimensional design, there is only one way in and one way out. To respect the symbol, one must cross the threshold in, follow the pathway that leads inevitably to a centre, leave that centre moving in the opposite direction on the pathway until the threshold is crossed out of the pattern. If one imagines a labyrinth in three dimensions, it would also be possible to leave the labyrinth from the centre by rising, perhaps

as Daedalus left Crete with wings, or by descending, as Craig Wright has suggested medieval theologians understood that Christ did symbolically from the centre of the labyrinth when he went to rescue the dead.²¹ The medieval understanding of the dual nature of the opening in the labyrinth is illustrated in a comment found alongside an eleventh century manuscript labyrinth from Abingdon, England:

“If mental control still exercises its law in me, and if, perchance, my right hand does not err excessively, as the facts bear witness wisdom has structured this city, which a sevenfold circle surrounds, and one and the same exit and entrance opens it with open approaches and closing, closes it again.”²²

*Labyrinth manuscript,
Abingdon, England, c.1040
Photo: courtesy Cambridge
University Library; Kk. 3.21*



Labyrinths with Doors

Most entryways and doors found in Roman mosaic labyrinths and parchment manuscript labyrinths are rounded, a shape that embodies movement. While every labyrinth has a portal that allows passage, some labyrinths have actual doors that are meant to protect, imprison, or in some cases, do both.

Only one Roman mosaic labyrinth with actual doors remains. Placed in a tomb in Hadrumetum (Sousse), Tunisia sometime between 200-250 CE,²³ its double doors are closed securely and explained by words on either side, *hic inclusus vitam perdit*, “The one who is locked in here will lose his life.” A polychrome image of the Minotaur in the centre completes the viewer’s understanding.

There are at least ten medieval examples of labyrinths with doors in written works from the 9th to the 15th centuries.²⁴ The earliest example from the 9th century is illustrated below.²⁵ A prominent feature of this multicolour seven circuit labyrinth is found in its upper left hand corner. A huge head of a dog menacingly watches over a single rounded doorway with a door propped open inside allowing access into the labyrinth. A long bolt that can be closed from the outside of the labyrinth is easily seen. In the centre of the labyrinth is the Minotaur eating a human figure. This manuscript labyrinth introduces many relevant details that are helpful to observe when considering actual doors in other parchment labyrinth examples. These include the placement of the door on the page, whether one or two doors are found, the presence or absence of a lock, and the nature of the centre and its relationship to the entrance. Clearly the doors in these labyrinths can be used to help the viewer understand what the labyrinth illustrates.



***9th century labyrinth
manuscript***

***Photo: courtesy
Bibliothèque Nationale
de France, Paris;
BNF Latin 4416, folio 35***

Doors to Labyrinths in Arabic and Persian Manuscripts

The three most colourful and by far the largest labyrinth doors are found in Arab manuscripts from Persia.²⁶ Mario Casari describes and discusses these Islamic labyrinths found in copies of *Mojmal Al-Tawāriḵ Wa'l-Qeṣaṣ*,²⁷ an anonymous 12th century chronicle “in the Persian tradition of literary historiography.”²⁸ Although their colours vary, the form of the labyrinth and the doorways clearly follow a conventional model. The nine-circuit labyrinths all appear as an illustration of Rome,²⁹ although it is not entirely clear if the labyrinths were a map of the city itself, or a prison located in the city.³⁰ These labyrinths drawn between 1350 and 1475 all have doorways in the upper right hand corner. Their height, which is equal to approximately half the diameter of the labyrinth, is an indication of their importance. While each doorway is unique, they are all situated within towers.

The Heidelberg example has a rounded doorway with two doors that are slightly ajar,³¹ as does the labyrinth in the Berlin example.³² While found within a tower topped with an Islamic design, the top of the doorway in the labyrinth from the Paris example is angular and it has no doors,³³ although the literary context and visual tradition would call for them, for these doorways represent the gates to a well-constructed city that is nearly impossible for a foreigner to understand or escape.³⁴

Doorway of the Heidelberg Persian manuscript labyrinth, c1475

Photo: courtesy Heidelberg University Library; Heidelberg MS Persian Cod. Heid. Orient. 118, folio 197.³⁵

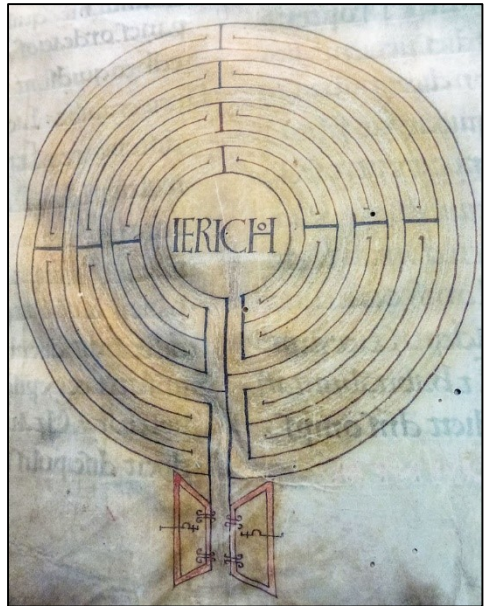


Jericho Labyrinth Doors

The presence of actual doors at the entryway to a city can be also found among the so-called Jericho labyrinths. There are two examples of this type of labyrinth whose city doors allow or inhibit access to Jericho, one from a 12th century Christian lectionary from Amiens³⁶ and one from the famous 14th century Jewish Farhi Bible.³⁷ Both these labyrinths have double doors³⁸ that are found near the bottom of the page, although in the Amiens example the doors are open and located outside the labyrinth, while in the Fahri example they are part of an external wall, flanked on both sides by towers and firmly closed. The centre of the Amiens labyrinth has the word *Jericho* written across it, while the centre of the Farhi labyrinth is a visual depiction of the city with the word *Jericho* as well.³⁹ Both have locking devices that emphasize the efficacy of the doors to protect the city.

Jericho Labyrinth with lockable doors

Photo: Alain Louët, courtesy Bibliothèque Municipale d'Amiens; Ms. 147, fol. 1r



While labyrinths where the Minotaur is found in the centre need entrances that protect those outside, Jericho labyrinths need doors to protect what is inside. There is no uniform description of the doors from the remaining manuscript labyrinths.⁴⁰ What is clear is that these doors represent the need to limit as well as to permit access depending on what is both outside and inside.

Passage into and out of Labyrinths

Labyrinths must be entered or exited by an opening in the outermost wall of the design. Most Roman mosaic labyrinths and medieval manuscript labyrinths emphasize this place of crossing from outside to inside, or inside to outside, by using an added visual feature. Many of the extant Roman mosaic labyrinths with a rounded passageway⁴¹ that pierces the encircling wall incorporate some type of tower, emphasizing the security of the passageway. Some of these mosaic labyrinths with towers also have bird guardians, watching over the entrance/exit.⁴² There are also examples of towers allowing access to the entryway into/out of labyrinths in medieval documents.⁴³ A passageway through houses in a wall is shown in another.⁴⁴ In addition, a manuscript labyrinth from the twelfth century shows pillars marking the transitional area.⁴⁵ Medieval manuscript labyrinths also use extension lines to draw attention to the entrance/exit. Some labyrinths have short marks just outside the threshold.⁴⁶ In others, one finds long lines,⁴⁷ and a couple feature more elaborate extensions.⁴⁸ Many examples of the use of extensions in labyrinths drawn during the Renaissance also exist. Although the visual images related to the transitional area may differ, it is clear that those who created labyrinths throughout history sought to draw attention to the important feature of the opening of the pattern.⁴⁹

This “door” was also emphasized by using Ariadne’s thread as a visual connector of the outside and inside of labyrinths. In the original myth, Theseus could not escape from the labyrinth without help to find his way out. The thread given to him by Ariadne thus symbolizes the possibility of exit from the dangerous environment. It also represents the double function of the doorway as both entrance and exit. Visual references to this thread are found in Roman mosaic labyrinths. For example, in a 2nd century mosaic labyrinth from Giannutri, Italy,⁵⁰ Ariadne holds a ball of string while standing on the top of a tower from which she watches Theseus battle the Minotaur in the centre.⁵¹ The pathway itself is depicted as the thread of Ariadne in another unusual 2nd century Tunisian labyrinth.⁵² In the early 4th century, a thread winding past the first two turns is found in the mosaic labyrinth from Al-Asnam, Algeria.⁵³ The thread of Ariadne is also present in medieval manuscript labyrinths.⁵⁴ Reference to it is mentioned in an inscription next to the late 12th or early 13th century stone-carved labyrinth found outside the Lucca Cathedral, “Here is the labyrinth that Daedalus from Crete built, and which no one can exit once inside; only Theseus was able to do so thanks to Ariadne’s thread.”⁵⁵ The importance of incorporating the thread of Ariadne in labyrinth images seems to be even more pronounced during the Renaissance⁵⁶ when depictions of the thread, sometimes tied to entryway, continue a long tradition of emphasizing the importance of the doorway as both providing access and egress from a complex environment.

Labyrinths as Passageways

As we continue to explore the importance of labyrinth entryways, it is relevant to consider not only doors and doorways incorporated in labyrinth patterns, but the ways in which the labyrinth symbol itself functioned as a symbol of passage.⁵⁷ It is noteworthy that many labyrinths are found near doorways in different historic, religious, and cultural contexts. The ancient respect for the power of the threshold meant that this area was sometimes singled out for special protection. Roman mosaic labyrinths placed by doors illustrate this well.⁵⁸ Understanding labyrinths with their limited and relatively secure passageway as a sign of protection may have contributed to the placement near doors. Kern notes, “The apotropaic function of labyrinths in doorways and cities, which can be inferred from the placement and share of Roman mosaic labyrinths,⁵⁹ was important in Indian threshold drawings,⁶⁰ and in an archway in Sauerland.”⁶¹

There may have been other reasons for labyrinths being placed close to doorways in Christian buildings. The mosaic in Al-Asnam was originally placed inside, “near the northern side aisles, on the west end opposite the northern portal, such that the entrance opened toward the door. The attention of the devout was thus immediately drawn to the labyrinth upon entering the church.”⁶² François Prévost has suggested that this location would also have allowed penitents, whose access to the whole church had been limited, to follow the labyrinth’s path while meditating on its central message (*sancta ecclesia*, holy church).⁶³

Church labyrinths such as those found at Lucca or St. Saturnin church in Aignan, France (possibly 12th century),⁶⁴ are placed outside the doorways to churches. Placement near the western portal was normative inside medieval churches.⁶⁵ One primary function of these labyrinths seems to have been to draw attention to a passage from the profane to the sacred, either from the outside of the church to its interior, or from the west towards the east as worshippers drew closer to the more sacred areas of the sanctuary, including the high altar. “West is where the main portal is located, where the faithful enter the house of worship, where the worldly meets the sacrosanct. That the devout would have entered the labyrinth immediately upon entering God’s house accords nicely with the odd placement of several manuscript labyrinths on flyleaves and endpapers. Moreover, most manuscript labyrinths have their entrances facing downward, a position tantamount to ‘west’ in medieval cartography.”⁶⁶ Those drawing and designing medieval labyrinths used the symbol to aid viewers in understanding, respecting, and embodying important transitions.⁶⁷

The Jewish Jericho medieval manuscript labyrinths illustrated this idea of sacred passage.⁶⁸ In their tradition, they symbolized entrance into Scripture and the Holy Land. Daniel Kokin discusses one example, the Frascati Codex,⁶⁹ “The labyrinth thus represents the gateway, not only to the Land of Israel, and not only to the biblical text, but also to God’s home on earth, the tabernacle or temple. Or to express this ascent in terms which account for both the focus of its aspiration and the context in which it is placed: The Jericho labyrinth represents the point of entry into the biblical text, understood metaphorically as the tabernacle or temple.”⁷⁰ While expressing the notion of passage in labyrinths according to their different historical or religious traditions, it is relevant to note how often the concept of a sacred passages emerges.

Labyrinths as Doorways to Manuscripts

Many examples exist of manuscripts beginning or ending a labyrinth.⁷¹ The design thus serves as a visual passageway into or out of the document. Penelope Reed Doob suggests two possible reasons for the placement of these, "...first the labyrinth might hint at the complexities of the preceding or following text in the spirit of Marius Mercator's recommendation of marginal mazes as a sign of difficulty; and second, the labyrinth might function as it does in the cathedrals of Reims and Amiens, as a seal of approval for work craftily constructed."⁷² Kern linked the placement of church labyrinths and manuscript labyrinths on the first or last pages. "Northern French labyrinths span the entire width of the nave, serving as a sort of obstacle or buffer zone. The devout were first supposed to internalize the labyrinth – with all its implications – by walking its path. Only then were they intended to continue to the inner sanctum. Perhaps the peculiar case that a considerable number of labyrinth illustrations appear on the flyleaves – the 'entrances' as it were – of manuscripts can be explained in a similar manner."⁷³ Another purpose to consider involves the medieval monastic practices of meditation.⁷⁴ The use of elaborate mental tools for memorization of important texts might be linked to these labyrinths created and seen primarily by monks. Clearly, more investigation is needed.

The Stone Doorway of the Chartres Cathedral Labyrinth

Before concluding this article with implications for contemporary labyrinth use, we will briefly explore one particular medieval labyrinth "door" that is of interest to many readers of this journal. The passageway into the labyrinth at the Chartres Cathedral is notable. Like many other cathedral labyrinths from the same period, this labyrinth is found in the nave, not far from the western portal, and would have been encountered as worshippers made their way east toward those areas of the church considered more sacred. It is placed on the threshold of the previous cathedral.⁷⁵ While the meaning of this is undocumented, it seems intentional, note-worthy, and related to the concept of entrance.



Entering the Chartres Cathedral labyrinth. Photo: JKH Geoffrion

Labyrinth doorway guarded by soldiers in a Syrian manuscript, created 1775.

Photo: courtesy of Lebanese National Library, Beirut; University St. Joseph MS fol. Syr. no. 1, fol. 1v

The entrance stone, which narrows as the path is entered,⁷⁶ indicates a type of welcoming that is not common to all labyrinth portals, as we have seen. This door, so unlike a later Syrian manuscript labyrinth where actual soldiers are placed at the door, invites entrance.⁷⁷



The shape of the first stone of the Chartres labyrinth is unlike any other in the labyrinth. We do not have records indicating why this particular shape was chosen, but the context within the Christian church allows for speculation that it might have served as a reminder of the cup of suffering and eternal life (Jesus' sacrifice) that was an essential element of every mass celebrated there. The shape also brings to mind a baptismal font with its symbolism of initiation. Many other possibilities exist for such a symbolic shape. It is critical to note that the labyrinth builders worked to bring attention to this passageway, which narrows as one arrives and widens as one departs.⁷⁸



The first/last stone of the Chartres Cathedral Labyrinth viewed as one exits the pattern. Photo: JKH Geoffrion

*Moses taking off his shoes in front of the burning bush.
Stained glass in Chartres Cathedral. Photo: JKH Geoffrion*

Every labyrinth is contextual; the Chartres labyrinth finds its place and meanings within a much larger architectural, theological, liturgical, and artistic environment. For a simple example that relates to this cathedral's labyrinth passageway, one need only look to the East from the first stone to see a stained glass image of Moses taking off his shoes beside the burning bush (where Christ can be seen blessing), a visual reference to Exodus 3:1-6 that includes God's command "Remove the sandals from your feet, for the place on which you are standing is holy ground..."⁷⁹ As we have seen elsewhere, emphasizing the potential and danger of thresholds has often been applied to the entrances of labyrinths.

For other reminders of the larger "discussion" of which the labyrinth's first/last stone is a part, one can look beside the labyrinth to find depictions of doorways in the stained glass of the nave.⁸⁰ For a more theological example, this specially-crafted doorway could easily call to mind Christ, the Alpha and Omega, the Beginning and the End, as he is called three times in the biblical book of Revelation and represented in six cathedral windows.⁸¹ This stone might also have brought to mind Jesus's words, "I am the gate... whoever enters by me will be saved and will come in and go out and find pasture."⁸² We have already noted possible echoes of the liturgy at Chartres when we discussed the unusual shape of the passageway. We return to the idea that a doorway often is a résumé of what lies beyond it. The Chartres labyrinth passage stone seems illustrative.



Implications for Contemporary Labyrinth Usage

Our hurried, modern societies seldom incorporate the ancient importance of ritually honouring transitions, including the entry into what is considered sacred space. Perhaps by considering the long and varied relationship of the entrance to labyrinths and the passages it has represented modern labyrinth enthusiasts can find ways to deepen their consideration and practice of labyrinth use. We have demonstrated that labyrinth designs have long been understood as more than a pathway that leads to and from a center. The third crucial element of the transitional space of a labyrinth design, whether in the form of an actual threshold, a door, or a passageway needs to be acknowledged and valued. Recognizing and even emphasizing the liminal space between the inside and outside of labyrinths carries much potential for deepening and enhancing a user's experience.

When practitioners enter the labyrinth they cross physical and temporal thresholds. Ulyatt explains, “As we step onto the path, we find ourselves at the limen of past and future; we are in the immediate present. What, if anything, are we leaving behind or separating from? The adjective “sacred” is frequently attached to the labyrinth’s unicursal paths, thus distinguishing them yet further from their profane surroundings. These attributions also imply or demand appropriate ritual behaviours.”⁸³ Let us suggest a few of the many possibilities.

Before entering or exiting, labyrinth practitioners might wish to pause more often, or perhaps longer, for reflection, allowing ample time for transition. Acknowledging that one is agreeing to be guided (upon crossing the threshold in) or gratefully acknowledging the guidance that has been received (before crossing the threshold out) could deepen the labyrinth experience further. Using a ritual gesture⁸⁴ to acknowledge the passing in and out of a labyrinth makes sense – literally. Greater consideration of how the doorway and center give meaning to one another could open new avenues of understanding and practice. Added attention to how the labyrinth functions as a passageway – mentally, physically, spiritually, and relationally – as well as reflecting on what kinds of barriers (closed doors), as well as invitations (open doors), the walker may be experiencing in their own life could also bear much fruit. Many labyrinth practitioners speak of the gifts of release from anxiety and peace that they receive while using labyrinths. Bringing more intention to the experience of crossing into and out of a labyrinth would likely increase these, allowing for even greater tranquility.

The deep respect for passageways, including the doorways of labyrinths, is evident as one studies the labyrinths that were created in other eras. The need to find more ways to allow the meaning of transition to touch and orient our lives calls from the entryway of each and every labyrinth. It invites us to revisit our understanding of these labyrinths in order to understand and experience them more profoundly.

Alain Pierre Louët and Jill K H Geoffrion, Chartres, France; February 2016

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Notes:

- 1 Tony Ulyatt, "'Gestures of approach': aspects of liminality and labyrinths." *Literator: Journal of Literary Criticism, comparative linguistics and literary studies* 32:2 (2011), p. 103.
- 2 Jean-Claude Schmitt, "Schwelle" in Uwe Fleckner, Martin Warnke & Hendrik Ziegler, *Handbuch der Politischen Ikonographie*. München: C.H. Beck, 2011, Band II, pp. 341-349.
- 3 Rudolf Otto, *Le Sacré. L'élément non-rationnel dans l'idée du divin et sa relation avec le rationnel*. Paris: Payot, 1949.
- 4 Mircea Eliade, *Patterns in comparative religion*. Lincoln, NE: University of Nebraska Press, 1977, pp. 370-371.
- 5 Heid M Viljoen & Chris N. Van der Merwe, *Beyond the Threshold: Explorations of Liminality in Literature*. New York: Peter Lang, 2007.
- 6 Janus is easily identified by his two heads, one facing the past, and the other facing the future. He was one of the principal Roman Gods (*dium deus*); other lesser Gods often called upon him for help. When Rome was at peace, the doorways to his temple were closed. He was represented with a key in his left hand and a rod in his right hand in order to show that he guarded doorways and watched over the roads. See chapter 18 (Quelques aspects du symbolisme de Janus) of René Guénon, *Symboles de la science sacrée*. Paris: Gallimard, 1962. When later used in Christian medieval buildings, Janus was also associated with Christ, the Alpha and Omega.
- 7 Pierre Miquel, *Dictionnaire des symboles liturgiques avec la collaboration de Sr Paula Picard*. Paris: Le Léopard d'or, 1995, p. 231.
- 8 For example, at Chartres Cathedral Janus is found by entryways on the West (Royal) Portal and in the archway leading to the portal of the East bay of the North Porch. During the medieval period, surveillance was natural at the doorways to churches; the crossing of an ecclesiastical threshold was appreciated as the most likely time for the occurrence of a miracle or an extraordinary healing. Many were recorded in the books of miracles written in the 11th and 12th centuries. See Pierre-André Sigal & Caroline Roux, "Reliques, pèlerinages et

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- miracles dans l'église médiévale (11-13 ème siècle)" *Revue de l'Histoire de l'Eglise de France* LXXVI (1990), 197, pp. 193-221. See also Caroline Roux, "Entre sacré et profane. Essai sur la symbolique et les fonctions du portail d'église en France entre le XIe et le XIIIe siècle" *La revue belge de philologie et d'histoire* 82: 4 (2004), pp. 839-854.
- 9 Linked with the biblical passage of Psalm 24:7: "Lift up your heads, O gates! and be lifted up, O ancient doors! that the King of glory may come in."
 - 10 In the Paschal Vigil Christians are reminded each year of the foundational passage of the Hebrew people, the crossing of the Red Sea. The idea of setting out in faith (crossing a threshold) and accepting the continual nature of the passage through life is integral to Christian Scriptures. (The teaching on 1 Peter 2:11 has been foundational to the understanding of life as a pilgrimage.)
 - 11 December 8, 2015 - November 20, 2016. In his homily at the Mass just before opening the Doorway of Mercy in Rome, Pope Francis said, "To pass through the Holy Door means to rediscover the infinite mercy of the Father who welcomes everyone and goes out personally to encounter each of them. It is he who seeks us! It is he who comes to encounter us! ... In passing through the Holy Door, then, may we feel that *we ourselves are part of this mystery of love, of tenderness*. Let us set aside all fear and dread, for these do not befit men and women who are loved. Instead, let us experience *the joy of encountering that grace which transforms all things*. ... May our passing through the Holy Door today commit us to making our own the mercy of the Good Samaritan."
 - 12 Resources for the Year of Mercy: The Holy Door. Federation of Diocesan Liturgical Commissions.
<https://fdlc.org/sites/default/files/files/Year%20of%20Mercy%20Holy%20Door%203.pdf>
 - 13 See Mircea Eliade, *Le sacré et le profane*. Paris: Gallimard, 1965, p. 21. "For religious man, space is not homogenous; there are ruptures and breaks: space has qualitative differences. 'Come no closer! Remove the sandals from your feet, for the place on which you are standing is holy ground.' (Exodus 3:5) Thus there is sacred space, which is "powerful," and significant and there are other spaces that are non-consecrated, and thus without structure or consistency, in a word, amorphous."
 - 14 See Titus Burckhardt, *Principes et méthodes de l'art sacré*. Paris: Dervy, 1976, p. 107, in the chapter "Je suis la porte." See also Jean Hani, *Le Symbolisme du Temple Chrétien*. Paris: Guy Trédaniel, 1990. See also Guénon, *Symboles de la science sacrée*, chapter 18 (Quelques aspects du symbolisme de Janus): "Ces représentations du jugement dernier, de même que celles du zodiaque (avec Janus), par une coïncidence bien particulière, se rencontrent fréquemment au portail des églises ...et expriment, pensons-nous, quelque chose de tout à fait fondamental dans la conception des constructeurs de cathédrales, qui se proposaient de donner à leurs œuvres un caractère 'pantaculaire,' au vrai sens de ce mot, c'est-à-dire d'en faire comme une sorte d'abrégé synthétique de l'Univers."
 - 15 Christ in the case of Christianity. See also Titus Burckhardt, *Sacred art in East and West: Its Principles and Methods*. Louisville, KY: Fons Vitae, 2001, for a discussion of the relationship between the door of the Mosque and the *mihrab* or niche that indicates the direction that worshippers should face when praying (i.e. the direction of the *Ka'aba* in Mecca).
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- 16 Indo-European languages generally situate the speaker as being on the inside rather than the outside of a door. See Emile Benveniste, *Le vocabulaire des institutions indo-européennes. 1. Economie, parenté, société*. Paris: Editions de Minuit, 1969, pp. 311-314. French examples: prendre la porte (quitter la maison), quelqu'un est à la porte (à l'extérieur), mettre quelqu'un à la porte (mettre dehors). American examples that situate the speaker inside the door: someone is at the door (someone wants to come in), show him/her the door (kick the person out), don't let the door hit you on the way out (I think you should leave), open the door (make an opportunity possible).
- 17 For example, in relationship to the disappearing practice of celebrating the entrance into the season of Lent in Carnivals, Guénon speaks of life becoming a *perpetual carnival*: "Ainsi, la disparition presque complète de ces fêtes (de carnaval qui visaient à canaliser ces forces d'en bas...) cette disparition, disons-nous, constitue au contraire, quand on va au fond des choses, un symptôme fort peu rassurant, puisqu'elle témoigne que le désordre a fait irruption dans tout le cours de l'existence et s'est généralisé à un tel point que nous vivons en réalité, pourrait-on dire, dans un sinistre carnaval perpétuel." See chapter 21 for the significance of carnivals.
- 18 See for example, Michèle Fellous, *À la recherche de nouveaux rites. Rites de passage et modernité avancée*. Paris: L'Harmattan, 2001. See also: Meg Cox, *The Book of New Family Traditions*. Philadelphia: Running Press, 2012.
- 19 One of the Greek kylixes from c. 450-440 BCE is in The British Museum, London (E 84). The other, dated 420-410 BCE, is in the Museo Arqueológico Nacional, Madrid, Spain (L 196).
- 20 Wiktor Daszweski, *Nea Paphos II: La Mosaïque de Thésée. Études sur les mosaïques avec représentations du labyrinthe, de Thésée et du Minotaure*. Varsovie: Éditions Scientifiques de Pologne, 1977, no. 45, plate 36. It can be found in the Musée Archéologique, Tripoli. See also Kern, 172, p. 101.
- 21 Craig Wright, *The Maze and the Warrior. Symbols in Architecture, Theology, and Music*. Cambridge, MA: Harvard University Press, 2001, pp. 73-78. This relates to the phrase in the Apostles' Creed, "...He descended into hell..."
- 22 Cambridge University Library, Kk. 3.21. See Kern, p. 141 A.
- 23 Kern 169, p. 100. It was found in an "underground Roman tomb... where burials and cremations took place." It is noteworthy that its location revolved around the final step of life, the passage to death.
- 24 Location, collection, folio/page, followed by the (date): (1) Paris, Bibliothèque Nationale de France Lat. 4416, folio 35 (9th century); (2) Paris, Bibliothèque Nationale de France Nouv. Acq. Latin 2169, folio 17r (1072); (3) Amiens BM, Ms. 147, folio 1r (12th century); (4) Berlin Staatsbibliothek, Stiftung Preussischer Kulturbesitz, 344, folio 167v. (1350); (5) Jerusalem, Library of Rabbi Salomon David Sassoon, Ms. 368, p. 22 (1382); (6) Berlin Staatsbibliothek, Stiftung Preussischer Kulturbesitz, Latin, folio 930, fol. 64rb (last quarter 14th century); (7) Munich, Bayerische Staatsbibliothek, Clm. 800, folio 55v (14th century); (8) Paris, Bibliothèque Nationale de France Nouv. Acq. Latin 635, folio 47r (1420); (9) Vatican, Biblioteca Apostolica Vaticana, Pal. Lat. 291, folio 170v. (1425); (10) Heidelberg MS Persian Cod. Heid. Orient. 118, Folio 197 (1475). Casari mentions that another Persian labyrinth with doorways: Dublin, Chester Beatty Library, MS Persian 330 (1420), but we could not confirm this visually. In addition, a later copy of the labyrinth in Amiens BM, Ms. 147 also exists: Amiens BM, Ms. 405, folio 213r (1611).
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- 25 Paris, Bibliothèque Nationale de France, Latin 4416, folio 35 (9th century).
- 26 These already appear in our list of labyrinth doorways in note 24: Berlin State Library, Prussian Cultural Heritage 344, folio 167v. (1350); Paris, Bibliothèque Nationale de France, Persian 62, folio 322v; Heidelberg MS Persian Cod. Heid. Orient. 118, Folio 197 (1475) and Dublin, Chester Beatty Library, MS Persian 330 (1420), but we were unable to locate an image of the latter to compare its features.
- 27 Mario Casari, *Rome Re-Imagined. Twelfth-century Jews, Christians and Muslims Encounter the Eternal City*. Boston: Brill, 2011, pp. 534-565.
- 28 *Encyclopædia Iranica*, <http://www.iranicaonline.org/articles/mojmal-al-tawarik> “The work concentrates on the Persian rulers before the advent of Islam, the Muslim conquests, and events related to Hamadān, indicating that the work probably originated there. The text includes elaborate lists of rulers and fictional narratives. The extant manuscripts are illustrated with maps and images, suggesting that the work was perhaps primarily written for the instruction of a member of the Saljuq nobility.
- 29 See Casari, p.548. The nine circuits of these labyrinths follow the literary tradition of a supposed pilgrim Harun ibn Yahya. “The wall and the bastion of the city Rome constitute a collection of wonder. They were built intelligently. There are nine surrounding walls, one after another. When a foreigner enters, he is confused when he leave; wherever he crosses, he finds himself in the centre. This report is famous.” After introducing a labyrinth these words are written, “The shape of the walls in Rome follow this fashion.”
- 30 In *A Lonely Wayfarer’s Guide to Pilgrimage*, a Muslim pilgrimage guide that included places throughout the Islamic world, written in 1215 (at least a century before the labyrinths we are considering) we read, “As for people saying [Rome] has seven walls, so that should one enter, one would not know how to leave, there is no foundation of truth to these words. Rather, it contains a prison the construction of which is to the form of a snail from which a prisoner would not know how to escape, this is a picture of it.” (The design, *Kitab al-isharat*, BN MS Or. 5975(a), folio 51 is of a seven circuit labyrinth with quadrants and no special door feature. See ‘Ali ibn Abi Bakr al-Harawi. *A Lonely Wayfarer’s Guide to Pilgrimage: ‘Ali ibn Abi Bakr al-Harawi’s Kitab al-isharat ila ma’rifat al-ziyarat*. Translated by Joseph W. Meri. Princeton: Darwin Press, 2004.
- 31 Berlin State Library, Prussian Cultural Heritage 344, folio 167v. The labyrinth has eight circuits rather than the nine that would be expected. Its pathways do not lead directly to the centre, although it is clear that they are meant to.
- 32 Heidelberg MS Persian Cod. Heid. Orient. 118, Folio 197. The labyrinth has nine circuits.
- 33 Paris, Bibliothèque Nationale de France, Persian 62, folio 322v. It too has nine circuits.
- 34 The earliest known labyrinth in Persian and Arabic literature is found in *Kitab dala’il al-qibla* (946-948), “[Rome’s] walls are most extraordinary: there are ten walls, one after the other; when a foreigner enters and walks along the space between the walls, until he gets near the city, it seems as if they are spinning around him, so he wants to leave but he gets confused and then might get lost, when he tries to return from a place he does not know; I have drawn their image.” Quoted in Casari, p. 551.
- 35 From *Mojmal Al-Tawāriḳ Wa’l-Qeşaş* showing Rome as a labyrinth.
- 36 Amiens BM, Ms. 147, folio 1r (12th century) and a copy from 1611: Amiens BM, Ms. 405, folio 213r. See Kern 223-224, p. 132.
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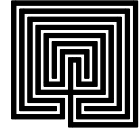
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- 37 Jerusalem, library of Rabbi Salomon David Sassoon, MS 368 (the Farhi Bible), p. 22 (1382). See Kern 227, p. 133.
- 38 Themes of duality are common as one considers the passageways into and out of labyrinths. The presence of double doors at the entryway could be symbolic of this coming and going.
- 39 Kern notes: “Above the labyrinth appears an inscription, which translates as: ‘The city of Jericho is drawn here, and it keeps one gate, and it closes in the face of the children of Israel and is shut tightly.’ The text below the labyrinth reads, ‘This is the city gate, and it leads to the middle.’ At the beginning of the thread of Ariadne appear the words, ‘large road’ and, at the centre, ‘Jericho.’”
- 40 Paris, Bibliothèque Nationale de France Nouv. Acq. Lat. 2169, folio 17r (1072) has a single doorway found toward the bottom of the page and on the inside of labyrinth. It is open and there is no lock or other hardware on the door; the centre is empty. Berlin Staatsbibliothek, Stiftung Preussischer Kulturbesitz, Latin, fol. 930, fol. 64rb (last quarter of the 14th century) has double doors at the bottom of the page on the outside of the labyrinth. They are open and Theseus is moving towards them with a sword or club in one hand and a ball of string representing Ariadne’s thread in his left. There are no locks on the door and nothing is found in the centre that has been completely coloured in. Paris, Bibliothèque Nationale de France Nouv. Acq. Latin 635, folio 47r (1420) has a stylized single doorway outside the labyrinth and at the very bottom of the page. Inside of it is the word *porta* (door); in the centre of the labyrinth is the word *carcer* (prison). Our final example, Rome, Biblioteca Apostolica Vaticana, Pal. Lat. 291, detail of folio 170v (1425) shows a monk sitting at the bottom of the page outside a labyrinth doorway whose door is opened to the outside. The pathway is seen extending toward the bottom of the entrance. The door was hinges and what appears to be a lock. The centre of the labyrinth is empty.
- 41 Piadena (ancient Betriacum), Italy (30-25 BCE), Kern 155, p. 97; Italica, Spain (c. 150 CE), Kern 141, p. 93; Vienna (Loig near Salzburg, Juvavum), Austria (c. 275-300 CE), Kern 175, p. 102; Henchir el Faouar (Belalis Maior), Tunisia (4th century CE). Kern 140, p. 93.
- 42 Fribourg (Cormérod), Switzerland (200-225 CE), Kern 136, p. 92; Lyon (Vienne), France (200-250 CE), Kern 146, p. 95; Brindisi (Brundisium), Italy (200-250 CE), Kern 123, p. 89. Saint-Cyr-sur-Mer, Var, France (1st century CE), Kern 166, p. 99; Cremona, Italy (1st century CE), Kern 132, p. 91; El Djem (Ancient Thysdrus), Tunisia (175-225 CE) with a stunning triple arch, Kern 135, p. 92; Pula, Croatia (2nd century CE), Kern 162, p. 98; Giannutri (anc. Dianium), Italy (2nd century CE) shows Ariadne on top of the tower with a ball of string, Kern 139, p. 93; Coimbra (Anc. Conimbriga), Portugal (2nd century CE), Kern 128, p. 90; Blois (Verdes), France (200-250 CE), Kern 121, p. 89; Avenches (Aventicum), Switzerland (c. 250 CE), Kern 120, p. 88; Sarajevo (Stolac), Bosnia-Herzegovina (c. 300 CE), Kern, 167, p. 99; Gamzigrad, Serbia (c. 300 CE) Kern 138, p.93.
- 43 Avranches, France, Ms. 240, folio 8v (11th century), Kern 187, p. 115; Rome, Biblioteca Apostolica Vatican, MS Vat. Lat. 1960, f 264v (1334-1339), Kern 205, p. 121; British Library MS 197 d 3, inv. Nos. 1889-5-27-42 and 43, fols. 29v and 30r (1460-70), Kern 209, p. 123; London, British Museum, A II, 10 (c. 1460-70), Kern 210, p. 124.
- 44 Vienna, Mechitharisten-Congregation, cod. 242, fol 169r. (1330), Kern 226, pp. 132-133.
- 45 Paris, BNF Latin 12999, folio 11r (12th century), Kern 237, p. 137.
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- 46 See for example: Milan, Biblioteca Ambrosiana C. 74, sup., fol. 28v (9th century), Kern 177, p. 110; St. Gall, Stiftsbibliothek, cod. 197, p. 122 (900); Kern 195, p. 117; Paris BNF Ms. Syriaque 70, fol. 154r (1059), Kern 221, p. 131; Oxford, Bodley auct. F. 6. 4, fol. 61av (S.C. 2150) (13th or 14th cent.), Kern p. 141; Munich BSB, Cod. Icon 242 (Johannes de Fontana, 1420-23), Kern 239, p. 138; Giovanni Fontana (1455), Kern 240, p. 138; Munich, Bayerische Staatsbibliothek, Clm 3941, fol. 54v (1480), Kern 249, p. 140.
- 47 See for example: Cambridge, University Library, Kk. 3.21 (11th century), Kern A, p.141; Monte Cassino, cod. 132, p. 348 (1032), Kern 188, p. 115; Paris BNF Ms. Arabe 6080, folio79v (1045), Kern 613, pp. 289-290; Munich Bayerische Staatsbibliothek, Clm. 14731, fol. 83r (12th century), Kern 222, p. 131.
- 48 See for example: Vienna Codex 2687, fol. 1r (871), Kern 176, p. 110.
- 49 If labyrinths have doorways, then they must by definition also have walls that inhibit access. The medieval Chartres Cathedral labyrinth is an excellent example because the design with its belt of one hundred and twelve carefully cut teeth makes the opening stand out. The Chartres labyrinth surround closely resembles the crenelated walls found in the Roman mosaic labyrinths which served a similar purpose.
- 50 Giannutri (anc. Dianium), Italy (2nd century CE), Kern 139, p. 93.
- 51 The thread of Ariadne is also shown in the mosaic displayed at the Kunsthistorisches Museum in Vienna, inv. no. AS II 20, Kern 175, p. 102.
- 52 Makthar (anc Mactaris), Tunisia (199 CE), Kern 147, p. 95. See Daszweski, plate 55.
- 53 Algiers, Al-Asnam, Orléansville, anc. Castellum Tingitanum (324 CE), Kern 117, p. 88
- 54 Jerusalem, library of Rabbi Salomon David Sassoon, MS 368, p. 22 (1382). See Kern 227, p. 133 and <http://www.farhi.org/bible.htm>. Berlin Staatsbibliothek, Stiftung Preussischer Kulturbesitz, MS lat., fol. 930, fol. 64 rb (14th century), Kern 189, p. 115 shows Theseus marching toward open doors that lead to a narrow passageway to the labyrinth. He has a ball of string in his hand. Kern notes, “The end of the clew is tied to the left-hand door.” Likewise, in a 1460-70 labyrinth from British Library MS 197 d 3, inv. Nos. 1889-5-27-42 and 43 (fols. 29v and 30r), Kern 209, p. 123, one finds Theseus standing on Crete with a ball of thread in his hand. A similar ball is found at his feet, its end tied to the side of the entryway of the labyrinth.
- 55 See Kern 268-9, p. 156.
- 56 For example, University of Leeds, Special Collections MS Roth 220 (1598), Kern 228, p. 133; “Guide to Marriage from the labyrinth of flirtation,” engraving in Jacob Cats, *Alle de Wercken*. Amsterdam, 1625; Kern 407, p. 222, etc.
- 57 While beyond the scope of this article, Nordic and Russian labyrinths near burial mounds come to mind as well. See Kern, p.267 “It is probably not a coincidence that about 20 sites (primarily in southern Sweden interior) have been found to be in the vicinity of prehistoric burials or grave fields.” See also Christer Westerdahl, “The Stone Labyrinths of the North.” *Caerdroia* 43 (2014), pp. 7-21.
- 58 For a striking example see Makthar (anc. Mactaris), Tunisia (199 CE) where the doorway leads directly into a labyrinth, Kern 147, p. 95. Another important example is from labyrinth mosaic in a frigidarium in the Baths of Theseus and the Minotaur, Belalis Maior, Tunisia (4th century CE). See Rebecca Molholt, “Roman Labyrinth Mosaics and the Experience of Motion.” *The Art Bulletin* 93:3 (2011), p. 288.
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- 59 Side, Turkey (2nd century CE), Kern 114, p. 85.
- 60 Kern 611, from an Indian pattern book, 1850 and Kern 612, drawing from a 20th century pattern book, page 289. See also John Layard. "Labyrinth Ritual in South India: Threshold and Tattoo Designs." *Folklore* 48:2 (1937), pp. 115-182. This is still practiced today. See also Kimberly Seward, *Ariadne's Thread: Legends of the Labyrinth*. Labyrinthos, 2013, pp. 33-34.
- 61 Kern, p. 106. See also note 25 in Molholt: "The idea of the labyrinth as a puzzle for the eyes, trapping the gaze, lent it considerable apotropaic power in the Roman world. Small labyrinths and knots, impossible to untangle, occasionally appear at thresholds, where, it was hoped, they could bind envy and ill will and prevent these forces from entering the house."
- 62 Kern, p. 88.
- 63 François Prévost, "Notice sur le labyrinthe de l'église de Reparatus, et sur des inscriptions relatives aux médecins militaires dans l'antiquité." *Revue Archéologique*, 8:2 (1851), pp. 566-573: "Le dessin d'Orléansville pouvait enfin avoir encore un autre but; le parcours de ses sinuosités, le nombre de fois qu'on pouvait lire les mots: Sancta Ecclesia, étaient peut-être donnés comme sujet de méditation aux pénitents qui stationnaient auprès des portes. Le musée de Cluny, à Paris, nous offre des sujets sculptés en ivoire qui exigent l'emploi d'une loupe, ou du moins d'un œil très exercé à suivre de minutieux détails, et qui étaient donnés dans certains couvents comme de sûrs moyens de méditer sérieusement, à cause de l'application soutenue qu'ils exigeaient pour être compris."
- 64 From the 12th century. See "The Labyrinth of St. Saturnin, Aignan, France." *Caerdroia* 45 (this edition) p. 51 for a note on this recently identified labyrinth adjacent to the doorway of the church of St. Saturnin at Aignan, France.
- 65 Kern, p. 106. Examples from Amiens, St. Quentin, and Reims in France.
- 66 Kern, p. 146.
- 67 This recalls Rebecca Molholt's comment (p. 288) about the fourth century Roman mosaic labyrinth in Belalis Maior, Tunisia: "These pavements, themselves illustrating a journey, rely also on the physical movement of the beholder; while the realm of the mosaic begins at the entrance to the room, only an oblique view of the entire composition is available from that vantage point. The narrative will not culminate until one steps into and then through the room."
- 68 See Kern pp. 128-135 for a discussion of the Jericho labyrinths.
- 69 Biblioteca Angelica, Rome, Ms. Or. 72, fol. 6v. (1326).
- 70 Daniel Stein Kokin, "The Jericho Labyrinth: The Rise and Fall of a Jewish Visual Trope," p. 56. https://www.academia.edu/1965828/The_Jericho_Labyrinth_The_Rise_and_Fall_of_a_Jewish_Visual_Trope
- 71 Kern, p. 323, note 22: Vienna Cod. 2687, fol. 1r, Fig. 176; Munich Clm. 6394, fol. 164v, 9th century, Fig. 235; Paris, MS lat. 13013, fol. 1r, 10th century, Fig. 181; Admont Cod. 89, fol. 1v, early 12th century, Fig. 197; Amiens, MS 405, fol. 213r, 12th century, Fig. 224; New York, MS 1, fol. 1r of Part II, 1294, Fig. 225; Beirut, MS F. Syr. No. 1, fol. 2r, 1775, Fig. 233; in the St. Gall Cod. 878, the labyrinth appears before a chronicle Fig. 194. We would also like to add: Orléans MS.16, fol.252 v (10th century) and Amiens BM, Ms. 147, fol. 1r (12th century).
- 72 Penelope Reed Doob, *The Idea of the Labyrinth from Classical Antiquity Through the Middle Ages*. Ithica, NY: Cornell University Press, 1990, p. 138.
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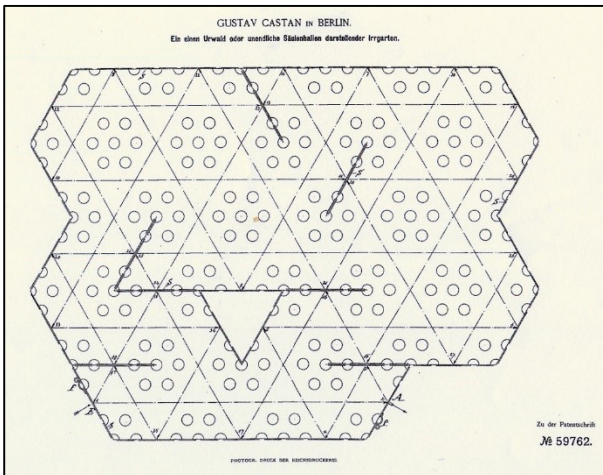
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- 73 Kern, p. 106.
- 74 Including meditation on the final passage of every life, that of death. See Mary J. Carruthers, *The book of memory: a study of memory in medieval culture* (2nd ed.). Cambridge, UK: Cambridge University Press, 2008. See also: Mary J. Carruthers & Jan M. Ziolkowski, *The medieval craft of memory: an anthology of texts and pictures*. Philadelphia, PA: University of Pennsylvania Press, 2002.
- 75 Charles Stegeman, *Les Cryptes de la Cathédrale de Chartres et les Cathédrales depuis l'Époque Gallo-Romaine*. Chartres: Société Archéologique d'Eure-et-Loir, 200, p. 184. "Le grand labyrinthe dans l'église gothique haute semble avoir été placé pour marquer l'endroit précis où se trouvait la façade romane. L'extrémité *ouest* du labyrinthe touche l'emplacement de la façade de 1020. Son emplacement ne manque pas de clarté en établissant visuellement l'entrée de l'église de Fulbert. Il ne peut pas y avoir de doute non plus: c'est bien l'église de Fulbert et non pas l'église romane détruite qui est honorée ainsi."
- 76 Conversely, it widens as one exits.
- 77 Lebanese National Library, Beirut, University St. Joseph MS fol. Syr. no. 1, fol. 1v (1775).
- 78 Note too how the many "teeth" (to use the French phrase) surrounding the labyrinth make the presence of a break in the outer decoration all the more visible.
- 79 This stained glass window above the choir depicts Moses, Isaiah and an incensing angel (Delaporte no. 119, Deremble-Manhes no. 102). See Manhes-Deremble, Colette. *Les Vitraux Narratifs de la Cathédrale de Chartres: Étude Iconographique. Corpus Vitrearum*. Paris: Le Léopard d'Or, 1994, for the Chartres window numbering systems.
- 80 See for example the doorways in the Good Samaritan (south) and Joseph (north) windows that are visible from the first/last stone.
- 81 Jesus is represented with these two Greek letters representing the beginning and the many times in the cathedral glass including the top panels of the Apostles Window (Delaporte no. 34, Deremble-Manhes no. 0), the Zodiac and Labours of the Months Window (Delaporte no.17, Deremble-Manhes no.28), and the St. Lubin Window (Delaporte no. 63, Deremble-Manhes no. 45, two rose windows in the clerestory: Christ Between Alpha and Omega (Deremble-Manhes no. 113C, Delaporte no. 135) and the Alpha and Omega Rose Window (Delaporte no. 70, Deremble-Manhes no. 140). See also the Ancient and Modern Glass Window (Delaporte no. 57, Deremble-Manhes no. 33A). See Revelation 1:8; 21:6; and 22:13.
- 82 John 10:7-10. This brings to mind the image of Jesus and a gate directly to the east of the transition stone. It is found in the Apostles' window in the ambulatory. One can also imagine echoes with the biblical text of entering by the narrow way.
- 83 Ulliyatt, p. 103.
- 84 Some commonly seen examples from different traditions include praying, taking a deep breath, stating an intention, making the sign of the cross, taking off one's shoes, and bowing.
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Gustav Castan's Mirror Maze



Angelika Friederici

Gustav Castan invented and constructed a technical illusion that today is known as the Mirror Maze, and was frequently patented.¹ One of these formations, known as the “Oriental Mirror Maze” has been preserved since 1899 as an attraction at the Glacier Garden in Lucerne.² The first patent he obtained for his creation was in France on September 8th 1888 (no. 192,868), followed by the second on September 12th 1888 in Belgium (no. 83240), in England on October 21st 1889 (no. 16593), with another granted for the “Mirror Maze” on September 3rd 1895 in the USA (no. 545,678), although the application was originally filed in 1891.³ The German patent is not available in any international database or research; dated April 19th 1891, it was issued on November 14th 1891 (no. 59762). Castan’s invention of “a forest or endless colonnade forming a maze” was intended “by the arrangement and interaction of mirrors and pillars or trees to make it appear to the spectator as if they were in an infinitely expanding portico, or a jungle, where they see their image countless times at the same time at each location. [...] The entrance takes place through the door *E*, the exit takes place through the door *A*. Both doors are closed immediately after opening by means of strong springs *f*. All the walls of the room, whose base is composed of a series of equilateral triangles, are covered with mirrors. The walls and the mirrors stand at an angle of exactly 60 degrees, or a multiple thereof, against each other, as are the individual trees or pillars of different groups also set at angles of 60 degrees or a multiple thereof. Although the pillars or trees are created in full or in cross sections of 1/6, 2/6, 3/6, 4/6 and 5/6, each part of these pillars or trees appears complete, due to the effect of the mirrors. Furthermore certain individual mirrors are mounted in the space so the area looks quite free as a whole, but stretches to infinity with thousands of trees or pillars. [...] The same columns can be decorated with architecturally ornate arches, thereby creating the impression of the cathedral of Cordova, reproduced in thousand-fold duplication.”⁴



Floor plan and construction of Gustav Castan's Spiegellabyrinth (mirror maze) as illustrated in the documentation of the German Patent No. 59762; April 19th 1891

Image: Deutsches Patent- und Markenamt, Berlin

On June 9th 1889, the “Moorish Maze” opened on the third floor in Castan’s Panopticum, at Friedrichstrasse 165, Berlin, and comprised only one room, but granted an infinite labyrinth of corridors, alleys, courtyards and interestingly designed views, painted by Felix Possart. In all of the Panopticum exhibition guides after 1889 “Castan’s maze” and the “Big Kaleidoscope” are described in detail over several pages. In 1893 the Panopticum expanded to include a large waxworks ‘Harem.’ A description from 1896 says “The ‘Maze’ in Castan’s Panopticum has undergone a major transformation. The first impression is Moorish, in the style of the Alhambra building. Through many perspectives, corridors, alleys and a palm garden, the path leads to the ‘Garden of Eden,’ Gustav Castan’s latest creation.” [...] “The mazes of our day, as one occasionally finds them in public shows and also in our Panopticum, create the illusion that the visitor has difficulty finding their way around, by mechanical devices in which reflections play an important role”⁵ Even if well informed in advance, visitors could not escape the bodily and apparent deception.

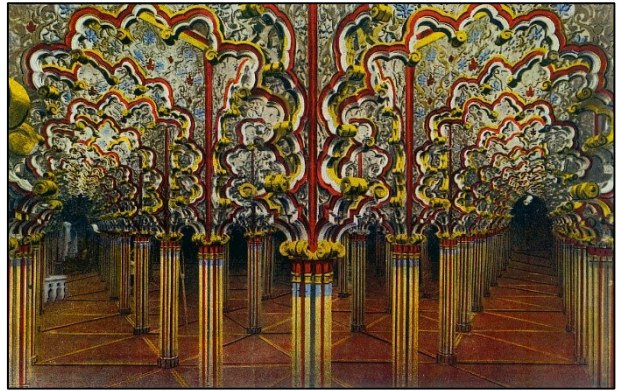
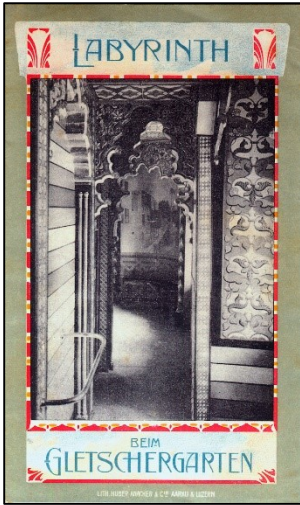
Following the installation of Gustav Castan’s first mirror maze, another was set up in 1889 in the Sultan’s palace in Constantinople, now Istanbul,⁶ and after multiple sales of this illusion elsewhere in Europe, the installation of another, likewise transportable in individual sections, complete with palm garden and Kaleidoscope, at the World Exhibition in Chicago in 1893 served as a ‘door opener’ for later use at American state fairs and world exhibitions. In the second half of the 19th century the “World Fairs” staged by the strongest economies in Europe, especially Britain and France, and then at the end of the century the United States made use of these tremendous fairs to show technical, commercial and cultural strength and build connections with Europe.⁷

On August 24th 1893, the *Vossische Zeitung* newspaper reported the return of Gustav Castan, “who had been employed at the World Exposition in Chicago with the construction and establishment of the Moorish Palace.” Built on the Midway Plaisance, the entertainment district of the Columbian World’s Fair in Chicago, by the German-American architect August Fiedler, it corresponded in construction, architectural decoration and interior shapes of Moorish art and architecture, reflecting a prevailing taste for oriental studies, also fashionable in Europe at the time. The Chicago mirror maze contained, just like the example at Castan’s Panopticum in Berlin, a palm garden, the waxworks harem and a giant kaleidoscope, plus a cave with a seemingly infinite number of stalactites and over 60 wax figures and spatial productions, the latter created by Gustav’s brother, Louis Castan.



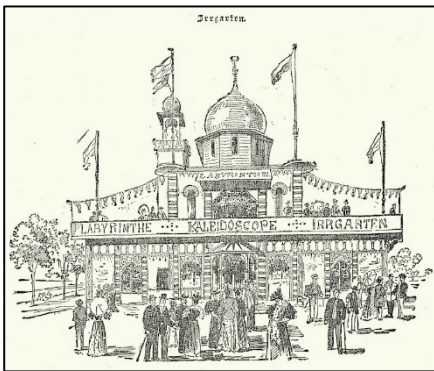
Mirror Maze in the Moorish Palace, Chicago, 1893.

Photo: Hubert Howe Bancroft's The Book of the Fair, published Chicago, 1893



Left: The entrance of the Lucerne Gletschergarten Labyrinth, on a brochure, c.1900. Above: An old postcard of the interior of the Gletschergarten Labyrinth

“How far [the maze] extends is impossible for one to determine, but the perplexed walker suspects that the spatial arrangement cannot be so great, because again and again one returns to old, familiar spots, however the deception as one looks into the infinite distance is created completely.” It fused “with ingenious imagination the architectural wonders of Cordoba and Granada [...] Before our eyes plays the fountain of magnificent Alhambra, and a short turn later a secret of the heart is unveiled. The old Pasha, the sweet flower girl, is to be envied indeed, and many Westerners, lost in this Moorish magical garden, may remember with a gentle sigh its charming pillars [...] and the greatest thing is that everywhere you meet yourself, not once, but ten, twenty times. Those of a timid mind may remain scared, so as not to run forward, and those who are unsure of themselves are advised to memorize themselves exactly in front of the mirror, so they are not fooled anew by the foreign figure, so strangely familiar.” (*Vossische Zeitung*, Berlin, June 8th 1889.)



Left: Castan's Labyrinth at the 1896 National Exhibition, Geneva

Right: Mirror Maze at Castan's Panopticon, Köln, Germany. Photo: Leporello, 1897

Other locations in which the mirror illusion was installed after 1893 include the California Midwinter International Exposition at Golden Gate Park, San Francisco, in 1894, the Cotton States and International Exposition in Piedmont Park, Atlanta in 1895, as well as at the Trans-Mississippi and International Exposition in Omaha, Nebraska in 1898.⁸ More recently, the design and operating principle of this maze developed by Gustav Castan was a source of inspiration for the architect and urban planner Bruno Taut, for his glass pavilion at the Cologne Werkbund Exhibition in 1914.⁹ Even today a replica is planned in America.¹⁰

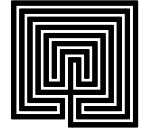
Angelika Friederici, Berlin, Germany; 2015
www.castans-panopticum.de

This is a translation of Angelika Friederici's article "Gustav Castans Spiegellabyrinth," originally published in *Optische Erscheinungen und technische Illusionen*, part D10, pp 12-15, of the *Castan's Panopticum. Ein Medium wird besichtigt* series, Berlin, 2015. Thanks go to Karl-Robert Schütze for permission and assistance with translation.

Notes:

- 1 Despite the patent, it was also copied: Bernhard Olsen from the Danish Panopticon was caught in Castan's Berlin maze in 1889 sketching the design of the system, and this was not the only case (*Vossische Zeitung*, October 6th 1889). Castan probably also sold his mazes: Präuscher's waxworks in Vienna mentions in their exhibition guides a maze and kaleidoscope; Friedrich Hermann Faerber opened a "Kabinett" with 30 mirrors in the Hamburg Panoptikum in 1890 and the Zurich Panopticum, at the Metropol am See, advertises a renewed maze in 1896.
- 2 The 2nd Swiss National Exhibition 1896 in Geneva unveiled an amusement park, including Gustav Castan's Labyrinth, an African "Völkerschau" with 230 Sudanese inhabitants, etc. From here Castan's Labyrinth was transferred later in 1896 to the Zurich Metropol, and then to the Glacier Garden in Lucerne in 1899.
- 3 Jeff Saward, "The Origins of Mirror & Wooden Panel Mazes." *Caerdroia* 37 (2008), pp. 4-12. The German patent is not detailed here. An updated version is available at <http://www.labyrinthos.net/mirrormazes.html>
- 4 Patentrolle Nr. 59762, Patentklasse 77: Sport, Spiele, Spielzeug (Sports, games, toys). Initially granted from April 19th 1891 to April 18th 1906, in addition to the one-time fee of 30 marks before the patent was granted, the cost of the patent increased from the second year to 50 marks for each subsequent year. It expired in Germany, due to non-payment of the fee for the fifth consecutive year, in 1895.
- 5 *Vossische Zeitung*, January 11th 1896 and March 29th 1896.
- 6 Wikipedia, keyword: Mirror Maze. Exact dates are unknown to the author.
- 7 Robert W. Rydell, *All the World's a Fair, Visions of Empire at America International Expositions 1876-1916*. Chicago: University of Chicago Press, 1985.
- 8 According to various exhibition guides owned by the author.
- 9 Neal David Nielsen, *Bruno Taut's Design Inspiration for the Glashaus*, Routledge 2015; *The importance of the Deutsche Luxfer Prismen Syndikat, the Victoria regia lily and Gothic imitation in the design of Bruno Taut's Glashaus*, Dissertation, Queensland University of Technology, 2015, p 178 ff. Castan's German patent of 1891 is also unrecorded here.
- 10 See <http://www.dafe.org/articles/projects/fortEdmonton.html>

The Road to Chartres



Richard Myers Shelton

Abstract: *The development of Carolingian labyrinths shows more influence from Roman labyrinths than commonly acknowledged; and the innovation of adding internal turns is almost completely undocumented in the surviving manuscripts.*

The history of the labyrinth revolves around three fundamentally interesting points. First is the early advent and long persistence of the 7-course *Classical* or *Cretan* design, though its common names are misleading, since it appeared well before Classical times and did not arise on Crete. Second is the Classical design's audacious appropriation of the legend of Theseus sometime around the 5th century BCE, when it first began to be known as a *labyrinth* – indeed, it became the *canonical* visual representation of the Labyrinth of Daedalus, even though the unicursal nature of the 7-course design seems counter-intuitive in the context of that story. And third is the development toward the end of the 1st millennium of the medieval church labyrinths that culminated in the 11-course design we generally call *Chartres*, since its realization in the nave of Chartres Cathedral remains its definitive statement.

The emergence of Chartres surprises us because this sophisticated symmetrical pattern arises almost without warning from a period popularly swept up into the “Dark Ages,” whose historical record has far more gaps than substance. But a limited view of the development of Chartres survives, from the changing designs worked out on parchment in the scriptorium, until labyrinths started being built into the church building itself, where many were clearly meant for people to trace or to walk as they entered the church. It is this third fulcrum in the history of labyrinths that I will explore in this paper.

At the outset, however, I want to acknowledge an enormous debt to Hermann Kern. His path-breaking compendium on labyrinths, originally published in 1982 shortly before his untimely death, and subsequently translated, updated, and reissued in 2000 [Kern 2000], is the bedrock upon which essentially all serious subsequent historical scholarship rests. Although I take issue below with some of his conclusions, I'll share here a saying from my own field that seems relevant: the stature of a mathematician tends to correlate directly with the number of *incorrect* proofs he or she has published, for there are always risks inherent in ploughing new ground. The rest of us are just tidying the loose ends.

Rome

Though it is not always easy to follow, the Road to Chartres began in Rome. The Romans loved unicursal designs and displayed them enthusiastically in decorative mosaics. The Roman labyrinths generally retain the association with Theseus forged earlier by the Greeks: a majority of the surviving mosaics make some reference to the Theseus legend, often showing the battle of Theseus and the Minotaur in the centre. The thread of Ariadne occasionally appears, trailing along part of the path – even though the unicursal nature of the path makes the thread superfluous except to remind the viewer of the context. These images make clear that the Roman designs truly recall the Labyrinth of myth: despite their unicursal nature they represent the House of Daedalus where the Minotaur was imprisoned.

The Romans, however, adapted the Classical design by uniting multiple copies of the basic pattern (typically four of them), connected one to the next in series, into a larger composite whole. This adaptation flourished in Roman culture and is found in mosaic floors throughout the territory of the Empire. It forms an important new stage in the labyrinth's history – just as the Classical design, at a previous stage, had eclipsed earlier multicursal depictions of the Minotaur's prison.

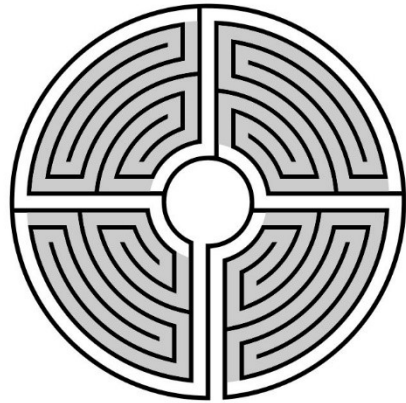


Fig. 1: Representative Roman layout – four linked copies of the Classical labyrinth

The influence of the Roman designs on later labyrinths is, I believe, routinely underestimated today. Kern argues [Kern 2000, p. 105] that the medieval period would have had no knowledge of Roman mosaics, but I am not convinced. Roman civilization, both material and intangible, pervaded especially the early middle ages, when people held as fast as they could to the memory and material remains of better times. Even today we have many more Roman labyrinths than medieval church labyrinths. It does not seem entirely plausible that *no* Roman mosaic labyrinths would have been known in Charlemagne's day, when many old Roman buildings were still in use. What is striking, rather, is the number of parallels between Roman labyrinths and later medieval ones. The Carolingians must have preserved some knowledge of Roman practice, perhaps (as I suspect) from actual mosaics, perhaps from early manuscripts that have since been lost.

The Middle Ages indeed took several lessons from the Roman labyrinth: that labyrinths could be brought indoors and displayed on the floors and walls of buildings; that labyrinths typically display the Minotaur at the centre; that labyrinths represent cities or fortresses, complete with towers and battlements and a gate at the entrance; that labyrinths could be laid out in cruciform patterns; that labyrinths could be assembled from component pieces; that it was permissible to tinker with the details of the component pieces. All of these characteristics are seen repeatedly in medieval manuscripts and early church labyrinths. Even in Chartres Cathedral, the now-lost central medallion showed Theseus and the Minotaur,¹ and the mysterious lunettes around the perimeter at Chartres are most naturally explained as stylized versions of the battlements that adorn so many of the Roman mosaics and survive in several manuscript drawings.²

If all this is true, then why are the church labyrinths not just copies in the Roman style? Well, of course, the first ones *were*, as we see in Al-Asnam (Kern 117) and Tizirt (Kern p. 101). How many more such Roman church labyrinths there may have been is now impossible to say, since most early churches have been destroyed or rebuilt. But already in Al-Asnam we see the attempt to convert the labyrinth into a Christian icon: although the thread of Ariadne remains to remind us of Theseus, in the centre we find not the Minotaur, but an alphabetic elaboration of the (unfortunately misspelled) phrase "Sancta Ecclesia" ("the Holy Church").

We see thus the repurposing of pagan ideas in a Christian context right from the beginning. The early Church, here as in so much else (its organization, architecture, ceremony, vestments, legal canons), adapted practices of the Imperial Court and made them its own. Church custom in general should not be seen as a *break* with the pagan, but as a preservation and adaptation of it. The Church maintained a continuous tradition from Roman times, and even if actual Roman mosaics, say, were unknown in Charlemagne's day, I think it likely that the tradition they represent was still carried forward, perhaps in early medieval mosaics modelled on examples like Al-Asnam.

Holding on to the Classical

But the Classical labyrinth remained a challenge for the Church. It clearly survived in the popular culture, and there is no need to worry, as Kern does, about transmission. The traditional Classical labyrinth was surely in the air just beyond the monastery walls. Kern speculates (p. 106) that in Carolingian times it was seen as an artefact of the invading Norsemen, and that this is what provided the impetus to Christianize it. I frankly doubt that; the labyrinthine associations we see in the manuscripts are mostly Classical ones that continue a pattern seen throughout the Empire during the previous millennium. The Romans knew the Classical labyrinth well; it appears even as graffiti in Pompeii – at least twice in the narrow window of time preserved by Vesuvius (Kern 107 and 108) – and it shows up again in Christian graffiti at Knidos half a millennium later [Lundén 2003]. There is no reason to expect that this endemic folk tradition would evaporate. It would not have been an alien notion, but a familiar one from home turf, as it were.

The oldest known manuscript depiction of a labyrinth is just such a piece of folk art. It comes from BNF Lat. 12048 [BNF], a parchment codex from north-eastern France, dating from near the end of the 8th century in the middle of Charlemagne's reign, before Viking raids began in France. This labyrinth is not catalogued in Kern, but is shown here (figure 2). It is a tiny illumination, delicately and competently drawn in black, with shading and details added in scarlet, yellow, and green. It is almost a prototypical example of the Classical design, and may well have been drawn from the seed pattern (but a pattern with short circular arcs instead of the more usual right-angled brackets). Here we see the commonplace unchurched labyrinth from the fields, before the erudition of the monasteries took it over and reformulated it into more regular and elaborated forms.

Fig. 2: Labyrinth initial in the Sacramentarium gelasianum, late 8th century, the earliest known manuscript labyrinth

Photo: courtesy Bibliothèque Nationale de France, Paris, MSS Latin 12048



This folk design, though undoubtedly well known, came with a catch: while the Church increasingly held the light leading to a more stable civilization in the years after the Empire fell, the labyrinth inconveniently retained pagan ideas and practices no longer consistent with the Church's direction. So, as with many popular pagan practices and celebrations, there was good reason to bring it under the auspices of the Church, or at least to provide a comparable Christian alternative.

I don't mean to imply a conscious cynical attempt by the Church hierarchy to co-opt popular tradition. In fact, I suspect rather the reverse: the natural reaction from the top is simple repression. It is the people in the trenches who preserve these things, who struggle to hold on to familiar customs that have yet to find a place in the new order. They endow them with new meaning and interpret them in new ways. We see this process play out again and again: the votive candles dedicated to the Virgin, now no longer a goddess but still holy; the monk who lovingly copies out *Beowulf*, saving it from oblivion by adding his own Christian interpretation; the local organist who converts a lilting *Ländler* into "Silent Night," though it would lose some of its secular lilt as the hierarchy allowed it wider currency. This process operates still in modern times, even in reverse – as, for example, increasingly non-religious people search for ways to retain meaning for Christmas and Easter in a spiritual outlook that no longer believes the literal truth of the old stories.

So I imagine, in my mind's eye, a new monk in a Carolingian scriptorium deliberately setting himself the spiritual quest of finding a Christian way to hold on to the labyrinth. He was perhaps not the first; others had tried it before. But here, I think, is the important point: *he knew it could be done*, for the old Roman decorative mosaics showed directly that a labyrinth could be arranged in a way to suggest the holy sign of the cross.

Why not Rome?

But again we put the key question: why did the monks not simply copy the Roman patterns? For they did not do so, and the absence of Roman-style labyrinths in the medieval manuscripts constitutes the chief argument that the middle ages were not aware of this solution.

I suggest instead that it was because the Roman labyrinths did not provide an *adequate* solution. The Roman labyrinths exhibit (like much of Roman culture) an almost doggedly methodical nature. They are almost invariably drawn in a rectangle or a circle which is almost invariably divided into four quarters via four axes – just as Rome habitually and methodically divided her cities and her military camps into what we still call *Quarters* ("the Latin Quarter," "soldiers' quarters"). The labyrinth path fills one quarter first with a *base labyrinth* – and then typically repeats this base to fill each successive quarter in turn, until the path finally turns into the centre at the end (figure 1). It is almost as though the ceremonial *lusus Troiae* (the "game of Troy") that Kern describes had been performed on horseback to inaugurate each quarter separately as the city or camp was being built. These military associations, from the battlements around the perimeter to the battle in the centre, undoubtedly resonated with the military posture of Roman culture, and surely account in some degree for the continued popularity of labyrinths in Rome.

The Romans were, in addition, a notoriously superstitious people, and the common placement of the mosaic labyrinths near the entrances of buildings suggests that they served

also as good luck charms to ward away evil influences. This, too, seems to have been remembered in later times, for the church labyrinths also generally congregate near entrances. Evidently the cross by itself – though universally considered a powerful charm against evil – could not entirely supplant the customary labyrinth, but it is not surprising that Christians should try to add the power of the cross to the old labyrinth.

Why, then, did the cruciform Roman designs not suffice? Because, I suggest, what the monks wanted to preserve and transform was something entirely different from the civilized Roman labyrinth. They were drawn by the powerful spiritual pull of the 7-course prehistoric labyrinth that was still being scratched on walls and cut in fields. The methodical, doggedly regular Roman labyrinth does not have that power. Though pretty to look at, it is mere decoration, not meant to be walked, let alone run. It is spiritually dead, dead, dead. There is no fire there. Even tracing the path becomes boring after the first quadrant.

The Classical labyrinth on the other hand has a certain wildness. It has broad sweeps and wide arcs. It is not penned up in quarters. The important trick – which could already be seen in Roman mosaics – is the introduction of internal walls to make the path double back in mid-course. You want to add enough walls to suggest the underlying cross, but not so many as to utterly break up the broad sweeps – for these are important to the power. Wide, powerful sweeps are thus combined with axial turnarounds to create the style of labyrinth patterns we now call *Gothic*.

It would be nice to be able to see the progress of this idea in the manuscripts as the monks worked it out. Kern (p. 25) suggests a methodical evolution: first converting the courses from the lopsided traditional shape into perfect circles; then expanding the labyrinth from seven courses to eleven (perhaps to introduce the Christian numeric symbolism marking the labyrinth as a metaphor for earthly imperfection); and finally adding internal turns to introduce the cross, eventually to be arranged with exquisite symmetry to form Chartres, the triumphant capstone of the project.

But this is not quite what we see. The manuscript record is frustratingly incomplete, and is further obscured by the difficulty of dating the manuscripts (which often bind together pages written in different periods). So we have only a few snapshots of the process, which we can only tentatively assemble in historical sequence. The manuscripts also varied in *influence*: some were well known and widely copied, while others languished largely unread beyond the community where they originated. The appearance of a detail in one manuscript does not necessarily mean that it has truly “arrived” and entered the culture.

The Earliest Manuscripts

Beyond the first delicate labyrinth described above, the three oldest surviving manuscript labyrinths described in Kern are, again, Classical in design. If we accept the dates he assigns, the oldest is Kern 220, written in the Abruzzi region of central Italy, a mountainous corner near the far southern border of Charlemagne’s empire, sometime between 806 and 822 around the end of Charlemagne’s life. The square shape of the labyrinth may indicate Byzantine influence – in an area that not long before had been under Byzantine control. The manuscript was brought at some unspecified time to the school at the monastery of Reichenau at Lake Constance, a central and influential monastery in Carolingian times that actively sought out manuscripts from around Europe.

The manuscript associates the labyrinth with Jericho rather than Troy or Crete – there is no hint of the Minotaur. Instead, the drawing juxtaposes the labyrinth with a Seal of Solomon (figure 3), a rotationally symmetric pattern of interlocking parallel courses with, in this case, a cross prominently imposed on top.³ This cruciform version of the Seal might represent another attempt to Christianize the labyrinth; and one can imagine (though it’s a bit of a reach) that this symmetric arrangement of interwoven courses might have suggested ideas leading to the symmetric cruciform layout of Chartres. In a remarkable show of continuity, this same Seal of Solomon, minus the decorative loops in the angles, shows up some 700 years later in association with the labyrinth on the robes of the Young Man in Bartolomeo Veneto’s painting, c. 1510, illustrated in Kern 374 and colour plate on Kern p. 16.

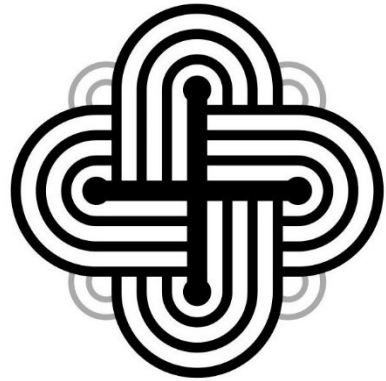


Fig. 3: The Seal of Solomon from Kern 220 – a cruciform version

The next labyrinth, Kern 194, unlike the Abruzzi labyrinth, is round, and like almost all the round manuscript labyrinths it uses circular courses in preference to the characteristic lopsided shape generated by the traditional seed pattern. There is no pictorial representation beyond the labyrinth itself, but the word *domus* is clearly visible at the centre. Kern claims a longer inscription: *domus dedali ... hac minotauram conclusuit* (“the house of Daedalus in which [Minos] imprisoned the Minotaur”), but I can see only *domus* in the digital version [Fribourg]. Nevertheless, this is likely a reference to the House of Daedalus. The codex belonged to (and the accompanying text was partly written by) Walahfrid Strabo from Reichenau Abbey, who came to the Carolingian capital at Aachen in 829 to tutor the future emperor Charles the Bald. Kern assigns the manuscript to this period in Aachen, and since Walahfrid returned to Reichenau to become its abbot in 838, this places the manuscript sometime around the 830’s.

Kern implies (p. 105) that the circular courses in the Carolingian manuscripts are a new development, probably with some theological significance. But circular courses were already common in Roman labyrinths. Further, the labyrinth from Knidos in Asia Minor [Lundén 2003], dating perhaps to the 500’s or 600’s (perhaps the earliest example of a Classical labyrinth in a Christian context) had already adapted the traditional shape by broadening the central area into a circle – and its centre is marked by a compass point used to generate partially circular courses. Kern speculates that the Carolingian circles were inspired by the divinely perfect circles of medieval cosmology inherited from the Ptolemaic universe – though this would seem to contradict the symbolism of earthly imperfection. I suspect the circular Roman model was adopted primarily because it was familiar, attractive, and easier to draw with the drafting tools commonly available in the scriptorium.

At least one monk, however, had trouble with circular courses; for in the third manuscript (Kern 180), written about 850 in the great monastery of St. Gall (which was just down the road from Reichenau and eventually grew in importance to overshadow it), we find another

round Classical labyrinth with many erasures along the main axis. As Kern suggests (p. 105), this draftsman must have been familiar with the seed pattern; but unlike Kern I read this diagram as an exercise in frustration: the artist was dismayed to discover that forcing the labyrinth into circular layout dislocates the arms of the seed pattern's central cross, so that its already negligible hint of Christian symbolism is lost altogether. This manuscript shows additional evidence of the traditional Troy-town in the turns along the axis: while virtually all the manuscript labyrinths have Roman-style squared-off turns between the courses, this one retains curved turn-arounds reminiscent of those seen later in Chartres Cathedral. This belaboured page strikes me as an experimental draft, not meant to be bound into a manuscript – for in addition to the unsightly erasures, the labyrinth appears in stark isolation, with no related material to tie it to Daedalus or to anything else.

At the opposite extreme is another 9th century circular Classical, unfortunately not catalogued in Kern (but see [Louët & Geoffrion 2016] p.15 of this edition). This glorious full-page illumination from BNF Lat. 4416 [BNF] is a treasure of early medieval art. The Bibliothèque Nationale does not narrow the date within with the 9th century, nor does it say where the manuscript originates, but the workmanship is very fine. The labyrinth is carefully drafted with perfect circles. The turn-arounds retain the curved turns of the countryside but are precisely drawn, and the free ends of the walls are decorated with fleurs-de-lys. The turn joining the two outer courses merges into a beast's head – possibly a serpent or a dragon meant to encircle the whole. As in Roman mosaics, the entrance is prominently marked with a door. In the centre – for the first time in the manuscripts – the Minotaur itself appears, evoking feminine sexuality with long tresses and bare breasts, and casually consuming one of the labyrinth's unfortunate victims. This conception of the Minotaur has much in common with the Fleury copy of Chartres discussed by Geoffrion and Louët [Geoffrion & Louët 2015].

As in several other manuscripts, the Minotaur is represented here with a human head and torso on a bull's body, rather than the typical Classical configuration of a bull's head on a human body. Today the former arrangement is often interpreted as a centaur, but this is not correct. In these cases the artists were careful to depict the body as a bull, not a horse – with cloven hooves, thin tail, and occasionally even the bull's characteristic belly tuft. Until modern times, there was only one Minotaur; certainly no race or species of Minotaur, much less a Linnaean description of them. All that was important to his identity as a mythological figure was that he was half human and half bull – and that is what the medieval drawings convey. One recognized him by the presence of his “attributes,” just as saints could be recognized and distinguished by their characteristic symbolism rather than by details of the way they were drawn.

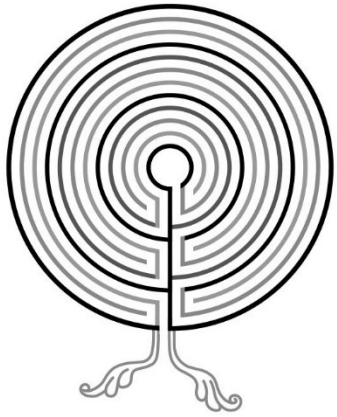
Otfrid

After these Classical labyrinths, we reach a fork in the road. One track leads to the Otfrid labyrinth and its copies. This design is a full-course labyrinth like the Classical labyrinth, but expands the number of courses from 7 to 11. Kern 176 shows its first appearance, carefully drawn in a manuscript written between 863 and 871 in the influential monastery school at Weißenburg (Wissembourg) near the Rhine in Alsace. This manuscript contains the partly autographic “original edition” of the *Evangelienbuch* of Otfrid, who taught at Weißenburg. The *Evangelienbuch*, one of the first literary works in German vernacular, recasts the

Gospels in rhymed couplets. It had wide influence, and the accompanying labyrinth inspired copies in several later manuscripts, including two early ones from major monasteries (also in the 9th century): one from Bobbio in northern Italy (Kern 177, with an error in the path) and one from St. Gall (Kern 195).

Fig. 4: The Otfrid labyrinth

While some of the copies of Otfrid depict Theseus or the Minotaur, Otfrid's manuscript itself (figure 4) contains no overt reference to their myth. But it still echoes Rome. First, the labyrinth displays a pair of stylized doors at the entrance, a feature present in most of the copies (and in many other manuscript labyrinths).



Second, the method of expansion from 7 courses to 11 follows the example set by Rome: when the Romans used more than seven courses in the base labyrinth, they typically expanded the base by piling on more meanders in sequence, just as in Otfrid – in preference to increasing the size of the meanders within the sequence, as in the 11-course Classical labyrinth. The difference can be seen in the level charts in figure 5: compare the transition from 5a to 5b with that from 5a to 5c. While the 11-course Classical labyrinth was later to become common in Scandinavia (more so in fact than the 7-course version), it is rare among Roman labyrinths and does not appear at all in the Carolingian corpus.⁴

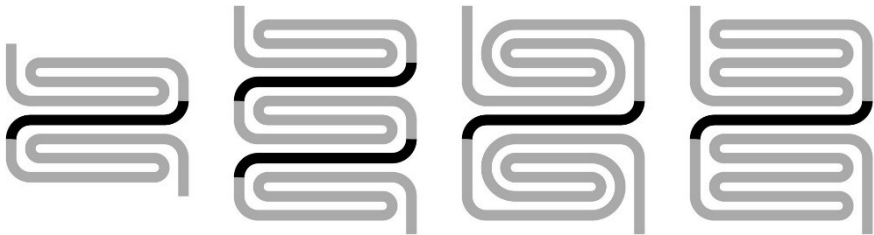


Fig. 5 a-d, left to right:

Fig. 5a: Classical-7 (γ^2), two meanders – Fig. 5b: Otfrid (γ_4^3), adding a meander

Fig. 5c: Classical-11 (γ_6^2), enlarging the meanders – Fig. 5d: The envelope of Chartres (α_6^2), two double meanders

The artist of this first Otfrid labyrinth was clearly aware of its composite structure: he used four colours for the circles forming the walls of the courses, and carefully repeated the colours in each meander so that corresponding walls in all three meanders use the same colour (except for the labyrinth's outermost and innermost walls, both drawn for emphasis in the darkest colour). More, he arranged the order of the colours so that the walls of the boundary courses 4 and 8 (the courses that connect the exit of one component meander with the entrance of the next) would be highlighted with the two darkest colours (see Saward 2003, p. 87, for a colour reproduction).

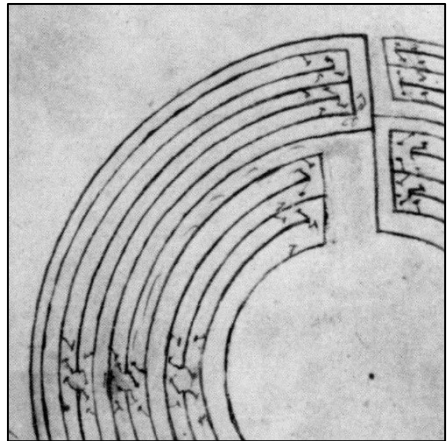
Heiric

But this first path, from the fork to Otrid, is a dead end. It is the second path that leads to Chartres. This is where we would expect to see some experimentation with internal turns; but (rather inconveniently) the first unambiguous appearance of a Gothic design with internal turns happens also to be the first unambiguous statement of the full-blown Chartres design. This is Kern 181 from the 10th century, drawn at St. Germain-des-Prés in Paris, depicting a Minotaurean devil enthroned at the centre. We get the inescapable feeling that we must be missing some manuscripts: there must be some antecedents, for this highly symmetrical design surely did not arise in one fell swoop.

And of course, there is one famous antecedent, but one that raises more questions than it answers. This is Kern 186, the enigmatic labyrinth of Heiric (Eric) of Auxerre. Heiric himself wrote the manuscript in or near Auxerre from 860 to 862, though we don't know whether he drew the labyrinth. Heiric had a habit of adding autobiographical comments to his texts, so we know rather more of his life than we do of the average monk's. He came to the monastery of St. Germain in Auxerre from an unknown but probably unremarkable family as a young oblate, i.e. as a boy dedicated to the service of the monastery. He became a budding scholar from an early age, and was barely 20 when he wrote this manuscript. It is tempting, in fact, to see in young Heiric the monk from my mind's eye; tempting to imagine that this young boy from an unremarkable family near Auxerre might have had some actual experience with real Troy-towns in the countryside. But even if Heiric is my man, this cannot be the manuscript where he forged the Gothic labyrinth.

The most curious aspect of this labyrinth is the treatment of the turn-arounds (figure 6). They are not solid obstacles as in later labyrinths, but something suggesting doors that could be open or closed. When they are open, the labyrinth is a full-course labyrinth; when closed, the labyrinth would appear to be studded with dead-ends – but dead-ends precisely where we expect turn-arounds in Chartres. Several commentators have remarked on these, and no one knows quite what to make of them.

Fig. 6: Detail of the labyrinth of Heiric of Auxerre



A common interpretation is that they represent experimentation with the *notion* of turn-arounds, a groping toward the concept of internal turns. Perhaps they represent double doors: as you traverse the labyrinth you are allowed to open the first pair in the set but not their mates just beyond, so you are forced to make the turn – while someone approaching from the opposite direction would open the opposite pair and turn the other way. But why are doors needed along the main axis? And why are the doors (if that's what they are) drawn with kinks? One wishes fervently that Heiric (if that's who it was) had succumbed here to his predilection for personal commentary, and had let us in on what he really had in mind!

Whatever he had in mind, I think it almost certain that he was not in fact inventing turn-arounds as we watch: Heiric (or his artistic collaborator) clearly had some prior knowledge of the Chartres pattern. Consider, in the first place, the enveloping shell – the full-course labyrinth into which these peculiar obstacles are being inserted (figure 7). This is confidently drawn – perhaps too confidently, for once the turns have been added, part of the main axis has to be erased and moved closer to the turns there. But where did this envelope come from? As figure 5d makes clear, it is not the Classical labyrinth, nor the 11-course Classical, nor even Otfrid – indeed, Heiric’s manuscript (and, we presume, the labyrinth as well) *pre-dates* the canonical presentation of Otfrid in Kern 176.

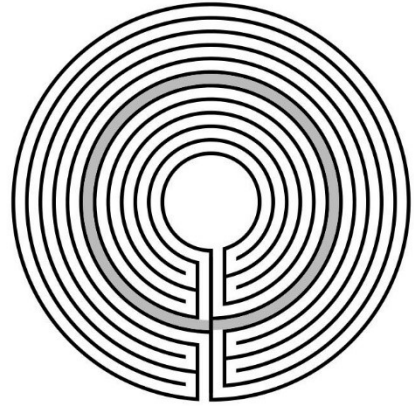


Fig. 7: α_6^2 , the envelope of Chartres

Heiric’s envelope is what Phillips would call α_6^2 – two stacked copies of the closed double meander of depth 6 [Phillips]. But α_6^2 is not your everyday garden-variety labyrinth. It occurs nowhere else in all of Kern. It is what you get by deleting the internal turns from Chartres, but it is hardly a convincing starting point from which to *add* turns to hit upon Chartres. This manuscript, in short, is not a case of Heiric starting from Otfrid – or from *any* familiar full-course labyrinth – and adding experimental turns to it.

Second, having picked precisely the right envelope, Heiric appears to know *precisely* where to add his innovative turns to produce perhaps the most symmetrically balanced 11 x 4 labyrinth possible. Where did that knowledge come from? Surely the first attempt to add the turn-arounds did not serendipitously put them all in the right place, as anyone who has tinkered with labyrinths can attest – and as the dismal trail of later ad hoc labyrinths in the manuscript record mutely bears witness. I realize that the Argument from Incredulity is not exactly logically sound, but I feel certain there must have been some intervening steps that we are not seeing. Heiric’s manuscript looks to me not like someone groping toward Chartres, but someone experimenting with the presentation of an already familiar design. Internal turns in general and Chartres in particular must already have been invented by this point – perhaps by Heiric or by a friend at Auxerre, though there’s no independent evidence for that. It would be very satisfying to be able to pinpoint the origin of the brilliant notion of letting the turn-arounds define the internal lines of the cross rather than the reverse – but beyond this general gesture toward Auxerre in the 9th century the manuscripts are not very helpful.

A plausible scenario for what actually happened is that Chartres was developed somewhat earlier in the 9th century at St. Germain in Auxerre – an important regional monastery, but one not yet in the same league as the politically and scholastically well-connected houses at Reichenau, St. Gall, and Weißenburg. Perhaps my monk at St. Germain invented internal axes, and perhaps Heiric incorporated this innovation into an early solution to address the

theoretical importance of 11 courses – a local solution that did not attract the immediate notice of the larger houses. It was perhaps only after Heiric and his students crossed paths with the influential students of Hrabanus Maurus (the leading lights of the “Carolingian Renaissance”) that the design from St. Germain gained a wider audience – and eventually spread to supplant the better known and initially more widely copied solution of Otfrid. And of course in time the design found its way onto the floor of the cathedral built in nearby Chartres, which lay in the same archdiocese as Auxerre and St. Germain.

At least, that’s how it might have played out. And examples of Roman labyrinths might well have survived in Auxerre to serve as models for the monks of St. Germain. Unlike the newly-settled sites of the great Carolingian houses, Auxerre was a previously existing city, dating back almost to the Roman conquest of Gaul, and an important Christian centre from the 4th century onward. Although the city was probably sacked by the Huns in 451, several churches built shortly afterward survived into Carolingian times.

Diffusion

Even if the Gothic labyrinth arose early in the 9th century at Auxerre, it might have taken some time to spread. Early copies of Chartres survive, though the problem of dating the manuscripts makes it difficult to place them in proper sequence. Kern 181 from St. Germain-des-Prés in Paris and Kern 196 from Auxerre are from the 10th century, perhaps indicating close ties between these houses dedicated to the two Gaulish saints bearing the name Germanus (St. Germanus of Paris and St. Germanus of Auxerre). Another 10th century copy from the monastery at Fleury, not far from Auxerre and Paris, was also discovered recently [Geoffrion & Louët 2015]. Yet another copy from Auxerre (Kern 178) may even date from the 9th century, though its codex was bound together later. All this suggests that, unlike Otfrid, the Chartres design stayed close to home in its early days.

But the next version (Kern 188) is from the 11th century, and from Italy, not France – and this labyrinth (figure 8) is particularly striking in the context of the diffusion of Chartres. It appears in a copy of *De rerum naturis* by Hrabanus Maurus, copied in 1023 at the influential monastery of Monte Cassino. Kern characterizes it as “a patently unsuccessful attempt to draw the Chartres type” – and so it is; but what it probably represents is an attempt to impose the internal axes of Chartres on top of Otfrid. The artist has tried to do what Kern suggests as the historical development: he started with Otfrid and added the internal turns from the Chartres pattern (actually, in this case, from the reflection of Chartres). He was clearly familiar with Otfrid (right down to its stylized doors) and had been exposed to Chartres, but not being familiar with the latter he had assumed incorrectly that the one is the envelope of the other.

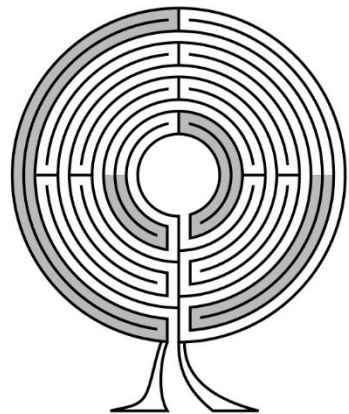


Fig. 8: “Hrabanus Maurus” from Monte Cassino, with isolated loops

Unfortunately, the turns from Chartres don't quite work in Otfrid. Had the artist added *all* of the internal turns, there would have been four closed loops (shown in grey in figure 7). By not including the final turns on the two side axes, he avoided the two most obvious closed loops; but two others remained. Those other two loops could also have been avoided (by omitting the innermost and outermost turns on the rear axis). That the artist did not do so suggests that he had a preconceived notion of what the axes should look like, and did not notice that the rear axis doesn't work.

Around this time, however, Chartres was beginning to take off. There are several other manuscript versions from the 11th century that are drawn correctly, and in the 12th century the design began to appear on floors and walls of churches, at first in Italy (often in decidedly Roman fashion as small mosaics in the floors) and by the end of the century in France as well. From the 12th century until well into the Renaissance, the majority of manuscript and church labyrinths use the Chartres design, though interesting new alternatives continued to be invented:

Abingdon	Kern p. 141	mid-11 th century
Admont	Kern 197	early 12 th century
Lambert	Kern 191	1121
Sens	Kern 289	c. 1175 ⁵
Reims	Kern 282–283	c. 1300

Clearly by the 12th century people were familiar with Chartres and were comfortable experimenting beyond it to create new Gothic patterns, though Chartres remained the most popular 11-course pattern (as, of course, it remains today).

In summary, I think it is clear from the manuscripts that Otfrid and Chartres were likely independent developments – different tracks leading from the fork I suggest above. And it seems to me likely that the Roman labyrinths or ideas from them, whether from mosaics or manuscripts, had more influence on both tracks than Kern appears to allow.

Richard Myers Shelton, Roseville, MN, USA; March 2016

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<http://gallica.bnf.fr/ark:/12148/btv1b60000317/f167.image>

9th century labyrinth in BNF Latin MS 4416 (the labyrinth is on folio 35r):

<http://gallica.bnf.fr/ark:/12148/btv1b85287653/f79.image>

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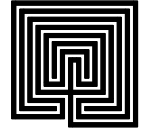
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Notes:

- 1 The central medallion at Chartres was confiscated for its metal content during the French Revolution. Kern (items 256–261) argues that it would not have represented Theseus and the Minotaur, since none of the other surviving church labyrinths from northern France do so; but he was evidently unaware of the 17th century account of Chartres by Charles Challine that describes just such a representation. See Wright 2001, p. 41.
- 2 The notion that the lunettes represent some sort of lunar computation device is not convincing. While there are $112 = 4 \times 28$ hollows between the teeth, the significance of four lunar months is not at all clear – and 28 days is not a very close representation of the lunar month. The average lunar month is somewhat over 29.5 days, and this was known even in the medieval Church: the calculation of Easter was one of the few scientific questions of interest to the Church, and the lunar calendar was known from ancient times with remarkable precision. An approximation by 28 days represents an error of over 5%, and would have fallen out of synch with the actual moon in very short order. The mechanics of the labyrinth as computation device are not clear either – a moveable marker would risk being accidentally kicked or scuffed out, and more permanent marks would have disfigured the floor.
- 3 The term “Seal of Solomon” generally connotes an interwoven polygonal path. The traditional Jewish Seal of Solomon is a pair of interwoven equilateral triangles, together forming a Magen David, or 6-pointed star. The pentagram or 5-pointed star is also often represented by an interwoven path, and the octagonal star formed by two interwoven squares is a common motif in Islamic decorative art. An interwoven path may form one continuous path, as in the pentagram, or it may divide into separate but interwoven pieces, as in the Magen David, the octagonal star, or the cross from the Abruzzi manuscript.
- 4 Classical-11 (γ_6^2 in Phillips’s notation) appears as a Roman base only in Kern 171 from Syracuse. Two other Roman labyrinths use larger composites of γ_6 ; and two or three more (depending how you reconstruct them) use even larger meanders. But the vast majority of Roman labyrinths use stacks of γ_4 (including γ_4^2 , the Classical labyrinth) or simple repeated serpentine patterns (stacks of γ_2).
- 5 The actual pattern of Sens is not certain and might have been simply a copy of Chartres; see Shelton 2009 and Ferré 2001.

The Belfast Cathedral Labyrinth



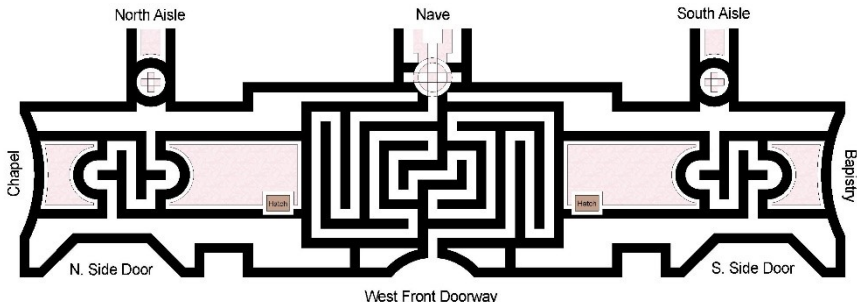
Jeff & Kimberly Saward

Previously overlooked in the labyrinth literature, but surely worthy of attention, the labyrinth laid in the floor of St. Anne's Cathedral (Church of Ireland) in Belfast, Northern Ireland, is an unusual addition to the corpus of ecclesiastic labyrinths built during the late 19th and early 20th century – the so-called Gothic Revival labyrinths.

When Belfast was granted 'city' status by Queen Victoria in 1888 the need for a cathedral in the city was also discussed. A proposal was put forward in 1896 and in 1899 the foundation stone was laid next to the old parish church of St. Anne's on Donegall Street. Initially the exterior walls of the cathedral were built around the church, which was then demolished in 1903, and by June 1904 the nave of the cathedral was complete and open for services. Originally designed by the Belfast architect Thomas Drew in Romanesque style, the construction work has continued ever since. The latest embellishment, the stainless steel "Spire of Hope," completed the roofline in 2007.

The marble floors that fill the nave of the cathedral were gifted by Sir John Milne Barbour (a prominent local politician) in memory of his wife Elise, and designed by the architect Sir Charles Nicholson in consultation with Cathedral Board. Constructed with Irish stone (black from Kilkenny and Galway, white from Recess, Dunlewy and Clifden and red from Co. Cork) by Purdey & Millard of Belfast, the floor was completed and dedicated on Ascension Day, 9th May 1929 by Dr. Grierson, the Bishop of Connor and Down & Dromore.

The designs inlaid in the floor at the west end of the nave are of particular interest. Most noticeable is the rectangular labyrinth, precisely 27 x 15 feet (7.01 x 4.57 metres), formed from marble slabs exactly one foot wide, occupying the floor space directly in front of the west doors. It has a very unusual meandering design with no close parallels; a single (white) path leads from the point between the doors and exits on the opposite side, directly onto the main aisle towards the altar. There are two further simple labyrinthine features in the floor, both 12 by 9 feet (3.66 x 2.74 metres), on either side of the principal labyrinth, this time set in front of the entrance doors leading into the north and south side aisles. The two designs are simple meanders with semi-circular protrusions, the mirror image of each other, and form a coherent flooring plan with the larger central labyrinth panel – see design below.





The Belfast Cathedral Labyrinth. Photo: Jeff Saward

The purpose of the labyrinth in the floor of the cathedral was succinctly documented shortly after completion in a guidebook and history of the cathedral written by Herbert Marshall Thompson, where he describes how “the space opposite the west door is covered with an intricate maze in black and white, typifying the difficulties of the pilgrimage to grace.” He goes on to describe how the labyrinth represents the journey of life, the white path, representing virtue, leads the walker through the labyrinth, into the main aisle and on towards the altar; but the opposite (black) pathway leads nowhere.

This fascinating labyrinth is not only a work of art in its own right, but also stands as one of the final flourishes of the plethora of paved labyrinths installed in the floors of churches and cathedrals, and also a selection of civic buildings, throughout north-western Europe during the latter half of the 19th and the early years of the 20th centuries. A similarly unusual labyrinth (based on the St. Omer design, but actually more a maze) was created in the parish church at Mailly-Maillet in northern France in 1927, and the small labyrinth in Riverside Church, Manhattan, USA (a scaled-down version of the Chartres design) was similarly installed in 1928/29. These and all of the other “Gothic Revival” labyrinths were largely the work of architects, often inspired by the medieval labyrinths of the French cathedrals, but other times creating novel designs to adorn structures old and new for the modern age.

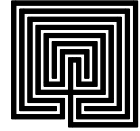
Jeff & Kimberly Saward, Thundersley, England; December 2015

Notes & References:

See the Belfast Cathedral website for further information: www.belfastcathedral.org – our thanks go to Norman Wetherall, cathedral archivist for his assistance with facts and figures and also to the staff of the cathedral for their hospitality on the occasion of our visit in November 2015.

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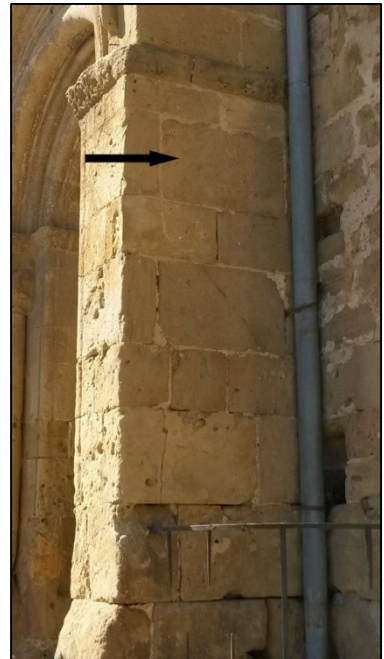


Our regular round up of matters labyrinthine brings together short contributions and notes from Caerdroia readers worldwide, also items from the Labyrinthos Archives that require further research, or simply deserve recording. Similar notes and queries are welcomed for future editions.

The Labyrinth of St. Saturnin, Aignan, France

Jeff Saward

Regular readers may recall several newly discovered small labyrinth inscriptions and carvings on the walls of churches in Italy (*Caerdroia* 43, pp. 52-53; *Caerdroia* 44, p. 57), mostly recorded due to renewed interest in historic labyrinths in southern Europe, and in this edition we record a similar discovery, but this time from the south of France. It is situated on the 12th century church of St. Saturnin in the village of Aignan, approximately 110 km west of Toulouse. The carving of a “classical” labyrinth of standard 7-path, 8-wall design is situated high on the outside wall, on the right hand side of the entrance porch on the south façade of the church. Although somewhat eroded, the design is still clear, and while surely of some considerable age, it is impossible to know when it might have been carved on the fabric of the building. Elsewhere on the portal are carved a simple sundial and a circular device resembling a mass-clock. The precise purpose of this labyrinth is open to considerable interpretation, but the location of labyrinths adjacent to the doorways of medieval churches is well attested. My thanks go to Alain Louët and Phillippe Baratault for assistance with gathering information for this short note.



*Labyrinth carved on the porch of the church of St. Saturnin, Aignan, France
Photos courtesy of Phillippe Baratault,
Maire d'Aignan*

The recently discovered Kambainallur stone labyrinth in Tamil Nadu was documented in *Caerdroia* 44, p. 56, and in July 2015 I was informed by my colleague Mr. Sadasivam of Palladam village, Tirupur District, of another similar labyrinth in Tamil Nadu, in Gedimedu village, 14 km east of Pollachi. This labyrinth is built of rocks and is 56 feet (17.1 metres) square. Again of “classical” form, it has seven paths and is known locally as the “ezu suthuk kottai” (seven round fort). When we visited the site we discovered that a shrine had been



built, just three years ago, over part of the labyrinth, but the temple priest has now agreed to remove this intrusive modern addition.

Left: The Gedimedu stone labyrinth, Tamil Nadu.

Below: The Ezu Sulta Kote stone labyrinth, Tamil Nadu.

I recently found another of these labyrinths built of stones, in the Tamil Nadu village of Ezu Sulta Kote (seven path fort) – the village itself is named after the labyrinth! While this labyrinth, 31 feet (9.4 metres) square, is relatively modern, the villagers say that it is a reconstruction, and they paint the stones of the labyrinth with whitewash every year.



Another labyrinth in Tamil Nadu to bring to attention is an inscription at Samanar Malai, 15 km from Madurai. First occupied more than 2000 years ago, and this complex is well-known for its stone beds and inscriptions created by Jain monks who would fast and study here. There are also a number of notable bas-relief sculptures dating from the 9th to 10th centuries CE. The labyrinth inscription appears scratched on the wall of the Karankalar cave, and is of the familiar square “classical” form.

Labyrinth inscription, Samanar Malai, Tamil Nadu. All photos courtesy of Sugavana Murugan

Regular readers will realise that labyrinths can sometimes turn up in the most unexpected locations, and that trying to figure out their origin is often a labyrinthine process in itself. Such is the case with some photos kindly sent to me (and reproduced here) by Ben Nicholson of New Harmony, Indiana, of a carpet he spotted on a recent visit to Savannah, Georgia, USA. The carpet in question is located in Scarborough House, built in 1819 for William Scarborough, shipping merchant and co-owner of the *Savannah*, the first steam ship to cross the Atlantic in the same year. Subsequently used as a public school, the house was restored in in the 1970's and again in 1996-97, shortly after it had been acquired as the home of the Ships of the Sea Maritime Museum – visit www.shipsofthesea.org for details.

The old ballroom of the house now contains part of the museum's extensive collection of maritime paintings, model ships and other nautical artefacts, and the floor is covered with carpet purchased in 1994 from J.R. Burrows & Co. of Rockland, MA. The carpet was woven to order at the Stourvale Mill in Kidderminster, Worcestershire, England, commissioned from the archive of over 10,000 historic carpet patterns, some over 200 years old, owned by the Grosvenor Wilton Company Ltd.



The particular pattern is entitled “The Sphinx” and was designed in 1804 by I. Arbuthnot. It consists of repeating panels of a series of pseudo-Egyptian ‘cartouches’ and hieroglyphs, with two principal design elements, a flying serpent and another creature – the eponymous sphinx – that reclines at the centre of an oval labyrinth. While such Egyptian inspired designs were very fashionable in the early decades of the 19th century, especially following Napoleon’s campaign in the region in the 1790’s and the subsequent publication of numerous books and engravings of the monuments discovered, one would imagine that this particular carpet was probably never a best seller.



*Left: the labyrinth on the 1804 “Sphinx” carpet
Right: the labyrinth in an 1802 encyclopaedia*



The combination of the sphinx and the labyrinth on the carpet design is presumably a conflation of the contemporary descriptions of the Great Sphinx of Giza and the Egyptian Labyrinth of Fayum. The source of the designs can likewise be sought in contemporary illustrations. Some of the early engraving of the Giza sphinx were not terribly accurate, and clearly one or other of those was used here. The source of the labyrinth employed on the carpet is however easier to determine – surely one of the illustrated plates that were popular in English encyclopaedias of the time.

The Saffron Walden Maze Festival 2016

an announcement

Following the great success of the events held in 2011 & 2013, the third Saffron Walden Maze Festival will be held August 20th & 21st 2016. The charming Essex town of Saffron Walden in southeast England is famous for its historic turf labyrinth (created 1699) and beautifully restored Victorian hedge maze (planted 1840). To mark the 2013 Festival a new labyrinth was installed in the bandstand in Jubilee Gardens, and there is a rumour that another maze will be added to the town's collection for the 2016 Festival! As always, a diverse range of maze and labyrinth related events are planned for the weekend and the editors of *Caerdroia* will surely be participating in the proceedings.

Visit www.saffronwaldenmaze festival.co.uk for the latest details.



The closing ceremony of the 2011 Saffron Walden Maze Festival. Photo: Jeff Saward

The Labyrinth Society

The Labyrinth Society, affectionately known as TLS, was founded in 1998 to support all those working with, or interested in labyrinths. Although based in the USA, it is an international organization with members around the world. Membership in the Society not only connects labyrinth enthusiasts to a worldwide community, but also supports websites and other labyrinth projects that provide information and resources to the world at large, including the Worldwide Labyrinth Locator website that now lists over 5000 labyrinths, and a few mazes, worldwide: www.labyrinthlocator.org

The TLS Annual Gathering 2016, will be held November 10-12, in Houston, Texas, USA. For details and more about The Labyrinth Society, visit: www.labyrinthsociety.org



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Caerdroia is always pleased to receive material for publication. Readers are urged to submit papers, shorter articles, notes, information, photographs – indeed, anything labyrinthine – for possible publication in future editions of Caerdroia. Articles and notes should preferably be sent as e-mail attachments in Microsoft Word .doc or .docx format (although .rtf and most other formats are acceptable), or on CD for PC compatible computer. Illustrations and photographs are preferred in .jpg or .tif format at 300 dpi resolution please, but please keep illustrations separate from text, and send as separate files, with position in text clearly marked. Photographs: colour or b&w prints and 35mm transparencies are also welcome if digital versions are unavailable, and will be copied and returned if requested. A preferred style guide for authors is available on the Caerdroia Submissions page on our website.

Because Caerdroia is a specialised journal for enthusiasts, no payment can be made for submissions, but any reproduction fees required will be covered, and all significant contributors will receive a complimentary copy and/or digital PDF. Short notes and press clippings are likewise welcomed, along with plans, postcards, guide books, photographs, etc., from any maze or labyrinth you may visit, for addition to the archives. Deadline for inclusion in Caerdroia 46: December 2016 please, for scheduled publication Spring 2017.



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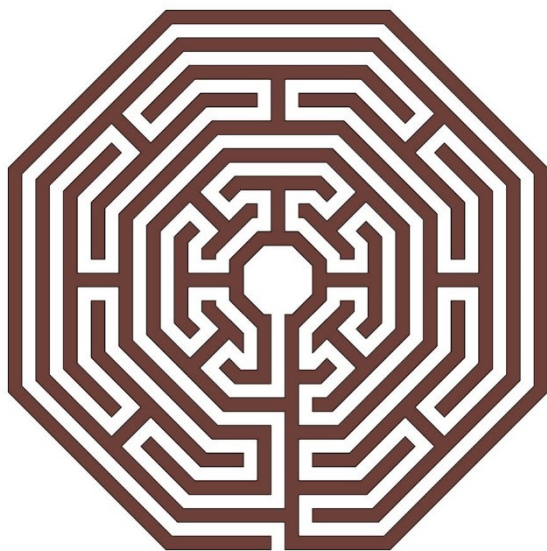
The story of mazes and labyrinths is as long and tortuous as their plans might suggest. For many, mention of the labyrinth may recall the legend of Theseus & the Minotaur. An increasing number will know of the ancient labyrinth symbol which occurs around the world, at different points in time, in places as diverse as Brazil, Arizona, Iceland, across Europe, in Africa, India and Sumatra. This symbol and its family of derivatives have been traced back 4000 years or more, but its origins remain mysterious. Modern puzzle mazes, however complex their form, are but the latest episode in this labyrinthine story.

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