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The Mozarabic Horseshoe Arches in the Church of San Román de Moroso (Cantabria, Spain)

By Gregory B. Kaplan, University of Tennessee

Introduction

The emergence of medieval archaeology as an academic discipline has been tied to an increased appreciation for the wide range of perspectives from which to consider the cultural significance of objects from the Middle Ages, with medieval churches providing perhaps the most important resource. These concepts lie at the foundation of my recent book, *El culto a San Millán en Valderredible, Cantabria: las iglesias rupestres y la formación del Camino de Santiago* (*The Cult of St. Millán in Valderredible, Cantabria: The Cave Churches and the Formation of the Way of St. James*),¹ in which I establish how an important pilgrimage route was forged through Valderredible—a valley through which the Ebro River runs in the southern part of the Spanish province of Cantabria—by the followers of St. Millán (474-574), a hermit who spent the last thirty years of his life in one of a number of caves located in the region. The early history of the cult of St. Millán is revealed in medieval texts and modern architectural theories, each of which provides a component of a vision of its evolution during the 6th and 7th centuries, when ascetics who imitated the hermit's lifestyle transformed several caverns into cave (or rock-cut) churches by sculpting their interiors according to conventions common to Visigothic churches. After the Islamic conquest of the Visigothic kingdom in the early 8th century, Christians, or Mozarabs, influenced by the culture of their new rulers, fused these conventions with new techniques brought to Spain by the Muslims to form a Mozarabic architectural style. One technique involved the use of horseshoe arches, which had been employed in Iberian architecture since Roman times, but which underwent an evolution that is evident in churches built during the early centuries of Islamic rule. This study focuses on the nature of this phenomenon and its manifestation in the two horseshoe arches in the church of San Román de Moroso (**figure 1**), one of only a few surviving Mozarabic monuments in Cantabria.

The Church of San Román de Moroso

The Church of San Román de Moroso (declared in 1931 a national historic monument or “Bien de interés cultural”), is located three kilometers to the north of Bostronizo, a village situated some fifty four kilometers to the southwest of the city of Santander. Although the distance between San Román de Moroso and Bostronizo (and other nearby villages in the

¹ Gregory Kaplan, *El culto a San Millán en Valderredible, Cantabria: las iglesias rupestres y la formación del Camino de Santiago* (Santander: Gobierno de Cantabria, 2009).



FIGURE 1 The Church of San Román de Moroso. Photo: G. Kaplan.

municipality of Arenas de Iguña) is not great, reaching the church can be difficult. Located in a region of elevated topography, it is situated between mountains, high above the valleys below through which the freeway and train tracks run, and beneath trees that render it almost invisible from above during the summer.²

The visitor to San Román de Moroso may wonder why a building of obvious spiritual importance is the only structure in the vicinity. The answer may be that the modern isolated appearance of San Román de Moroso conceals a much different history. Part of this history may have been detected during a major restoration of San Román de Moroso in the early 1980s, when a cemetery was discovered in the grassy field that surrounds the church.³ While some of the

² The narrow road that winds its way toward the church from Bostronizo can be traversed by car, although during the winter months, which are typically cold and wet, this route must be navigated with caution. A pleasant way of arriving at San Román de Moroso is by foot, especially during the summer months when its tranquil setting in the shade near a small stream provides a welcome respite from the afternoon sun.

³ For more on this restoration, which took place over a period of four years (1980-84), see the comments made by Enrique Campuzano Ruiz, *et al*, *Catálogo monumental de Cantabria II: Valles del Saja y del Besaya* (Santander: Diputación Regional de Cantabria, 1991), pp. 341-42, and by Miguel Ángel García Guinea, *et al*, *Historia de Cantabria: Prehistoria, edades Antigua y media* (Santander: Estudio, 1985), p. 324. Campuzano Ruiz points out that the cemetery was discovered in 1981(342). Although the objects found in the cemetery have not yet been studied,

unearthed sarcophagi are on display next to the church, due to a fear of grave robbers and an inability to arrange for an archaeological study, the tombs themselves have been covered over. This cemetery may have served the needs of those who lived nearby. According to local legend, the grassy field immediately to the east of San Román de Moroso, part of which is now a cow pasture, was once the site of a medieval village that has been buried over the centuries.

The earliest reference to San Román de Moroso is found in a document from 1119, well after the construction of the church, in which it was donated to the Benedictine abbey of Santo Domingo de Silos.⁴ The donation was made by Queen Urraca (r. 1109-1126), the daughter of King Alfonso VI of León (r. 1065-1109) and Castile (r. 1072-1109), who ascended the throne upon the death of her half-brother Sancho. The inclusion of San Román de Moroso as part of a royal donation to one of the most important Castilian monasteries of the Middle Ages reflects the spiritual center's regional prestige. That the document calls it a monastery ("*monasterii, videlicet, sancti Romani de Moroso*") indicates the presence of a monastic community. This foundation was one of many in Cantabria during the 8th, 9th and 10th centuries, when secondary monasteries, often brought into existence by donations from wealthy families and typically populated by small numbers of monks, would frequently be donated to larger monasteries. Although San Román de Moroso pertained to the orbit of Santo Domingo de Silos for hundreds of years, it maintained a local importance as a priory that came to own a number of properties and that oversaw several Cantabrian parishes.⁵

The position of the only entrance to San Román de Moroso in the building's northern wall is noteworthy because it is not located on the western or southern sides as in other Cantabrian Mozarabic churches such as Santa Leocadia and Santa María de Lebeña.⁶ Other Peninsular Mozarabic churches with entrances in their southern or western sides include Santa María de Melque (Toledo), San Miguel de Olérdula (Barcelona), San Quirce de Pedret (Barcelona), San Cebrián de Mazote (León), and San Miguel de Celanova (Orense). The north entrance of San Román de Moroso may have been spurred by topographical issues as the downward slope of the terrain immediately outside of the western and southern walls is rather steep. A similar situation has been observed in the case of the early eleventh-century Church of San Baudelio de Berlanga (Soria). According to Manuel Gómez Moreno, the difficult terrain around this church is the reason that the principal entrance was created on its north side.⁷

the physical appearance of the sarcophagi situated next to the church reveals that they are not from the recent past. It would be logical to speculate that at least some of the sarcophagi date from the Middle Ages.

⁴ For the text of this document, see Miguel C. Vivancos Gómez, *Documentación del monasterio de Santo Domingo de Silos (954-1254)* (Burgos: J. M. Garrido Garrido, 1988), pp. 41-43. The abbey of Santo Domingo de Silos is located in the Spanish province of Burgos, some 240 km to the south of San Román de Moroso.

⁵ For references to these properties and parishes, see Vivancos Gómez (*ibid*, p. 42), and Miguel C. Vivancos Gómez, *Documentación del monasterio de Santo Domingo de Silos, índices 954-1300: Fondo antiguo de Silos, Fondo de Silos en el Archivo Histórico Nacional* (Silos: Abadía de Silos, 1998), pp. 236-37, 270-71).

⁶ The Church of Santa Leocadia is located in the village of Helguera, some nine kilometers to the north of Bostronizo, and the Church of Santa María de Lebeña is located some sixty-five kilometers to the west of Bostronizo.

⁷ Manuel Gómez Moreno, *Iglesias mozárabes: Arte español de los siglos IX a XI*, vol. 1 (Madrid: Centro de Estudios Históricos, 1919), p. 309.

Another more-intriguing explanation for the location of the entrance to San Román de Moroso is that it may have been designed to face other buildings, perhaps those that formed part of a nearby village. This possibility has been suggested in the case of the Romanesque church of San Juan in Raicedo, a twelfth-century structure that is less than five kilometers from Bostronizo and whose principal entrance adorns its north wall (with a secondary entrance placed in the south wall). According to Enrique Campuzano Ruiz, the placement of the principal entrance indicates that it was once situated either in front of a building of local importance or a town center.⁸ Gómez Moreno advances a similar view with respect to the one-time presence of a sacristy near an entrance in the northern wall of the Mozarabic Monastery of San Miguel de Escalada (León), which also features entrances in its southern wall.⁹ In the case of San Román de Moroso, since it is very unlikely that any buildings existed to the south or the west because of the terrain, this church may also have been constructed with a north-facing entrance, where there is sufficient space in the terrain for one or two small structures. Perhaps a sacristy and a building dedicated to the needs of the monastic community of San Román de Moroso were once situated in this small area.

The Evolution of the Horseshoe Arch in Iberian Architecture

The entrance to San Román de Moroso leads to an interior that is divided into two spaces: a nave, which measures six and a half meters from east to west and four and a half meters from north to south, and an apse, which measures three and a half meters from east to west and three meters from north to south. The most impressive aspect of the structure is the horseshoe arch, standing four and a half meters tall, which adorns the division between the apse and the nave. This horseshoe arch, along with another above the entrance to the church, are two of a very few such arches that have survived in Cantabrian Mozarabic architecture. The phenomenon that lies at the core of my analysis is the evolution, from the period of Visigothic rule in Spain to the early centuries after the inception of Islamic dominance, of the horseshoe arch, a component of medieval Spanish church architecture that traces its roots to antiquity, when it was perhaps first used, as Gómez Moreno posits, in India or Mesopotamia.¹⁰ Leopoldo Torres Balbás conjectures that it was the Romans, perhaps after seeing the horseshoe arch used in representations of Asian deities, who were the first to incorporate the form into European architecture as evidenced by the fact that it was employed in Roman structures built before the second century C.E.¹¹ With regard to the arrival of the horseshoe arch to Spain, Vicente Lampérez y Romea suggests that Jews coming from the Middle East may have imported it during the period of Roman rule.¹² The plausibility of this theory is reinforced by the fact that Jews living in the Peninsula maintained

⁸ Campuzano Ruiz, p. 334.

⁹ Gómez Moreno, *Iglesias mozárabes*, p. 152.

¹⁰ Manuel Gómez Moreno, Manuel, "Excursión a través del arco de herradura," *Cultura española* 3 (1906), pp. 785-811 (pp. 787-88).

¹¹ Leopoldo Torres Balbás, *Historia de España: España musulmana, hasta la caída del Califato de Córdoba* (Madrid: Espasa-Calpe, 1950), p. 364.

¹² Vicente Lampérez y Romea, *Historia de la arquitectura Cristiana española en la Edad Media*, vol. 1, 2nd ed. (Madrid: Espasa-Calpe, 1930), p. 149.

commercial contacts with Syria, which could have served as the conduit through which the horseshoe arch arrived from Asia.

While the manner by which the horseshoe arch reached the Iberian Peninsula is open to debate, it was certainly known in Roman times as it appears on pagan funeral steles from Asturias dating from the second century C.E.¹³ During the following centuries, the form began to be utilized in church architecture, including the horseshoe-shaped walls that enclosed apses in several churches (thus producing floors in these apses that were also horseshoe shaped). An example of this is the apse, dating from the fourth or fifth century, found in the Church of Marialba, situated seven kilometers to the south of León.¹⁴ Another example, dating from approximately the same time period, was discovered near the end of the eighteenth century in the ruins of the Church of Segóbriga (also known as Cabeza de Griego), near the Spanish village of Uclés (Cuenca).¹⁵ Luis Caballero Zoreda speculates that this horseshoe-shaped apse may have been a mausoleum before forming part of a church.¹⁶ He dates the structure from the fifth century, while Emilio Camps Cazorla and Pedro de Palol believe that it was built during the 500s.¹⁷ Another horseshoe-shaped apse can be found in the ruins of a church in a town, Dehesa de la Cocosa (Badajoz), which, according to José Serra Ráfols was established in the sixth century.¹⁸ Contemporary horseshoe-shaped apses include one found in Tarragona beneath the Romanesque Church of Milagro (sixth or seventh century), the Church of Valdecebadar (Badajoz, seventh century), and the three apses in the seventh-century Portuguese Church of São Frutuoso de Montelios.¹⁹ Although apses from this period are more often rectangular, the examples above reflect the long tradition of the horseshoe arch in Iberian church architecture.

This tradition is also evident in the case of horseshoe arches employed in an upright manner to support structures. Perhaps the oldest example is a horseshoe arch over the entrance to Santa Eulalia de Bóveda (Lugo)—now a church, but whose original function is unknown—

¹³ For more on these funeral steles, see Lampérez y Romea (pp. 146-49).

¹⁴ For more on the Church of Marialba, see Theodor Hauschild, "La iglesia martirial de Marialba (León)," *Boletín de la Real Academia de la Historia* 163 (1968), pp. 243-49.

¹⁵ Although these ruins have deteriorated over the years, the horseshoe shape of the apse is clearly indicated in the floor plan that was made upon the discovery of the Church of Segóbriga (Emilio Camps Cazorla, "El arte hispanovisigodo," in R. Menéndez Pidal [dir.], *Historia de España*, vol. 3 (Madrid: Espasa-Calpe, 1940), pp. 435-608, esp. p. 494.

¹⁶ Luis Caballero Zoreda, "Algunas observaciones sobre arquitectura española de "época de transición" (Cabeza de Griego y visigoda)," in *Innovación y continuidad en la España visigótica* (Toledo: Instituto de Estudios Visigótico-Mozárabes de San Eugenio, 1981), pp. 69-103, esp. pp. 72-73.

¹⁷ Camps Cazorla, p. 496; Pedro de Palol, *Arqueología cristiana de la España romana: Siglos IV-VI* (Madrid: Consejo Superior de Investigaciones Científicas, 1967), p. 93.

¹⁸ José Serra Ráfols, *La "villa" romana de La dehesa de La Cocosa* (Badajoz: Diputación Provincial de Badajoz, 1952), p. 164.

¹⁹ Concerning the date of the apse in Tarragona, see Palol, p. 59, and concerning the dates of the churches of Valdecebadar and São Frutuoso de Montelios see, respectively, Thilo Ulbert, Ulbert, Thilo, 1973, "Die Westgotenzeitliche Kirche von Valdecebadar bei Olivenza," *Madridrer Mitteilungen* 14 (1973), pp. 201-16, and Jerrilynn Dodds, Dodds, 1990, *Architecture and Ideology in Early Medieval Spain* (University Park, PA: Pennsylvania State University Press, 1990), p. 121, note 31.

which dates from the fourth or fifth centuries.²⁰ While it did exist in Peninsular architecture, there is little evidence that suggests that the upright horseshoe arch was widely used prior to the conversion from Arianism to Catholicism in 587 of Visigothic King Recared, whereupon it became an important component in church construction. The union between the Church and the monarchy that occurred in the wake of the conversion the King elevated the status of the Catholic bishopric and created a spiritual link to the Catholic majority of the population. This legitimized and extended the hegemony of the monarchy, allowing it to maintain power until it was defeated by Muslim forces in the early 700s.

The Symbolic Function of the Horseshoe Arch

In order to perpetuate the notion of a divinely inspired, centralized political authority, a symbiotic relationship developed between Catholic bishops and Visigothic kings, with the former exercising an influence at court and the latter attending church councils at which codes of religious conduct were established. Both the bishopric and the monarchy stood to benefit from this symbiosis insofar as “church councils were envisioned as a means to impose obedience and unity upon all the inhabitants of the kingdom.”²¹ The symbiosis between bishops and kings was communicated to the public through the promulgation of civil and canonical legislation, the latter of which standardized the performance of rituals and inspired a change in the manner by which priests physically situated themselves with respect to their congregants during mass. Whereas during the celebration of the Roman Rite the space between these two entities was unobstructed, with priests approaching their congregants in order to give Communion and, in churches possessing an altar between the apse and nave, the formation by congregants of a semicircle around the altar during mass, sixth and seventh century Peninsular Church councils broke with tradition and forged a new liturgy, which came to be known as the Visigothic Rite or the Mozarabic Rite.²² As Jerrilynn Dodds explains, this liturgy mandated “the physical and at times visual separation of the clergy.... [which] had the effect of enhancing the clergy’s position, of rendering them more formidable.”²³ Canons issued by the First Council of Braga and the Fourth Council of Toledo excluded congregants from receiving Communion near the altar, a space that was reserved for the clergy alone.²⁴ Congregants were relegated to another space, which was

²⁰ Concerning the date of Santa Eulalia de Bóveda, see Luis Caballero Zoreda, “La ‘forma en herradura’ hasta el siglo VIII, y los arcos de herradura de la iglesia visigoda de Santa María de Melque,” *Archivo español de la arqueología* 50-51 (1977), pp. 323-74, esp. p. 335.

²¹ Rachel L. Stocking, *Bishops, Councils, and Consensus in the Visigothic Kingdom 589-633* (Ann Arbor: University of Michigan Press, 2000), p. 4.

²² Because it continued to be practiced by Christians living under Islamic rule, the Visigothic Rite is also called the Mozarabic Rite. On the configuration of the celebration of Communion according to the Roman Rite, see Joseph A. Jungmann, *The Mass of the Roman Rite: Its Origins and Development*, vol. 2 (New York: Benziger, 1950-55), pp. 166, 374-75.

²³ Dodds, p. 26.

²⁴ For the text of these canons, see José Vives, ed., *Concilios visigóticos e hispano-romanos* (Madrid: Consejo Superior de Investigaciones Científicas, 1963), pp. 73-74, 198.

created by the placement of horseshoe arches between the apses and naves of Visigothic churches. By remaining partially hidden as they directed mass from the apse, the clergy emitted an air of superiority that reinforced the hierarchy established in church councils.

The horseshoe arch served as a visual representation of this hierarchy in churches built from masonry during the seventh century (or, in two cases, perhaps as late as the early 700s): San Juan de Baños (completed around 661 in Palencia), Santa Comba de Bande (completed during the second half of the seventh century in Orense), Santa María de Quintanilla de las Viñas (completed during the second half of the seventh century or the beginning of the eighth century in Burgos), San Pedro de la Nave (completed during the second half of the seventh century or the beginning of the eighth century in Zamora), and São Pedro de Balsemão (completed during the second half of the seventh century in northern Portugal).²⁵ In *El culto a San Millán en Valderredible*, I demonstrate that horseshoe arches create a similar partition in Cantabrian cave or rock-cut churches (churches carved into the soft sandstone characteristic of the region), which were also fashioned according to the norms established by Visigothic Church councils. The horseshoe arches sculpted into the rock over the entrances to the apses in several of these cave churches possess superelevations that were created in order to obstruct the view from the naves, a manifestation of the Visigothic style that parallels contemporary masonry techniques as can be seen in the photos of the interiors of the cave Church of Santa María de Valverde (**figure 2**) and the masonry Church of São Pedro de Balsemão (**figure 3**)

The Functions of the Superelevation of a Horseshoe Arch

While different types of arches have been used throughout history to separate interior spaces, a horseshoe arch possesses a feature that enhances this effect to the point of “suggest[ing] the inhibition of passage,”²⁶ which motivates its repeated employment over the entrances to the apses in Visigothic churches. In geometric terms, the difference between a horseshoe arch (**figure 4**) and a semicircular (or Roman) arch, (**figure 5**) is the curvature of the former that occupies more than a semicircle, this extension of the curvature being known as the superelevation. The length of a superelevation is determined by measuring the distance (a straight line) between the center of the arch (a point in space that is equidistant from the voussoirs that form the arch) and the arch’s springline (the lowest point on the springer, where the curve of the arch begins). For all intents and purposes, the addition of a superelevation transforms a semicircular arch into one with a horseshoe form, and in extending its ends beyond a circle and inwards toward each other the superelevation provides the aforementioned symbolic value as well as structural benefits.

The superelevation has a technological function that may explain its use over the doorway to structures that, like San Román de Moroso, possess only one entrance. The advantage of employing a horseshoe arch rather than a semicircular one in the construction of such buildings derives from the characteristic horseshoe form created by the superelevation,

²⁵ The dedication of San Juan de Baños in 661 is recorded in an inscription found on a stone plaque above the horseshoe arch over the entrance to the apse. For summaries of the critical views regarding the dates of Santa Comba de Bande, Santa María de Quintanilla de las Viñas and San Pedro de la Nave, and São Pedro de Balsemão, see Dodds, pp. 124-26, notes 63-64, and pp. 126-27, note 70.

²⁶ Dodds, p. 15.



FIGURE 2 The horseshoe arch over the entrance to the apse in the cave Church of Santa María de Valverde. Photo: G. Kaplan.



FIGURE 3 Horseshoe arch over the entrance to the apse in the masonry Church of São Pedro de Balsemão. Photo: Paulo Almeida Fernandes; used with permission of the Instituto Português do Património Arquitectónico.

which can distribute vertical pressure laterally through the abutment surrounding its extended intrados more effectively than a semicircular arch. A horseshoe arch thus possesses a curvature that allows for the immediate creation of a span—that is, the space between the jambs through which individuals can enter and leave the building—which is not obstructed by support posts as is the case when the masonry above a semicircular arch is completed.

Ramón Corzo Sánchez makes this observation with respect to the horseshoe arch over the entrance to Santa Eulalia de Bóveda, which, during construction, would “not have needed to support the inner arch curvature in the ground.”²⁷ The use of a horseshoe arch expedites the process of constructing a building with only one entrance. As Corzo Sánchez explains, if the outside walls are all built at the same time, this type of building is “completely enclosed once the inner curvature of the arch above the door is propped up; if a horseshoe arch is utilized, the entrance can remain free of obstacles, thus facilitating simultaneous work inside and outside without having to constantly climb scaffolding.”²⁸ This may have been what occurred during the construction of San Román de Moroso. The employment of a horseshoe arch above the only entrance would have allowed construction of the abutment and walls around it, as well as the two

²⁷ “...no tener que apoyar cimbras en el suelo.” Ramón Corzo Sánchez, “Génesis y función del arco de herradura,” *Al-Andalus* 43 (1978), pp. 125-42, p. 133. The translation into English is mine.

²⁸ “...quedan totalmente cerradas al apuntalar las cimbras de la puerta; si se aplica el arco de herradura la entrada puede mantenerse expedita, facilitando el trabajo simultáneo por dentro y por fuera sin tener que subir constantemente por los andamios.” Corzo Sánchez, p. 129. The translation into English is mine.

interior spaces (the apse and the nave), to have proceeded in the most efficacious manner possible.

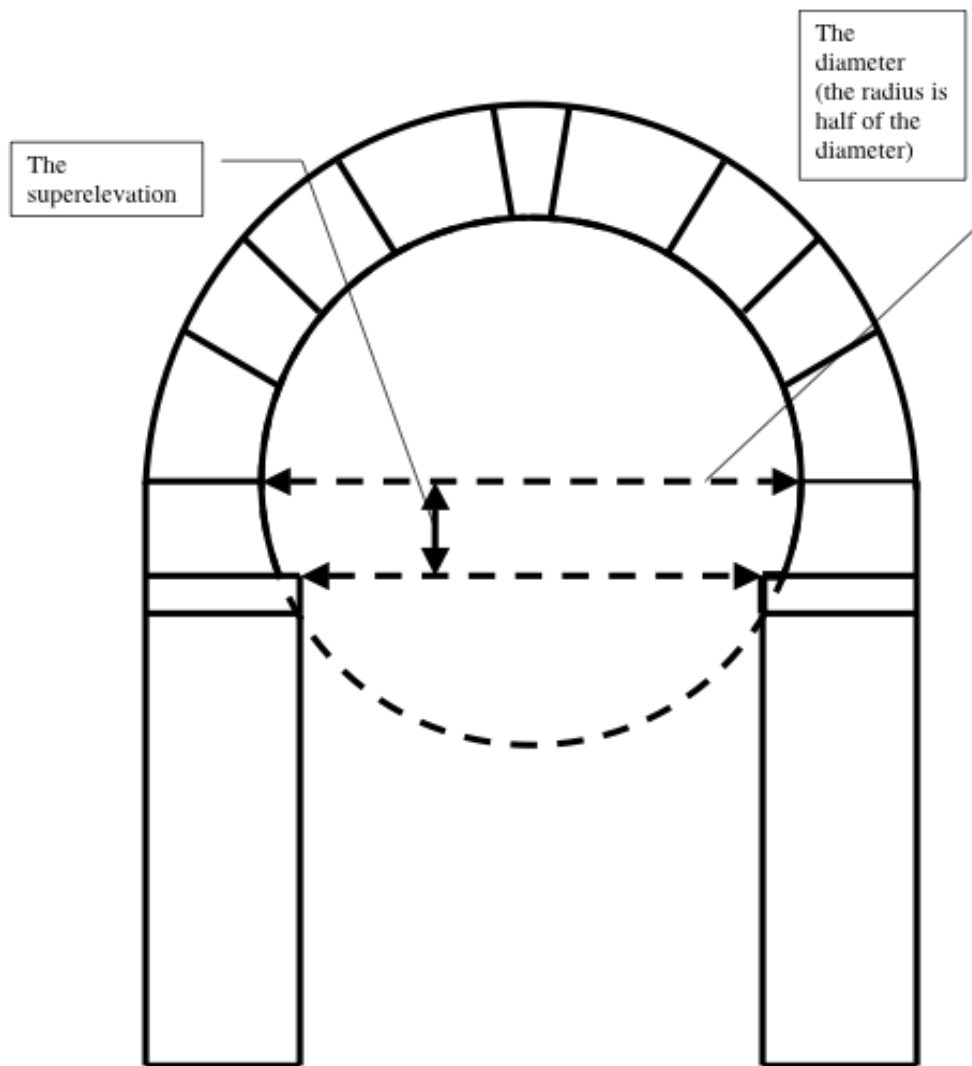


FIGURE 4 In Visigothic horseshoe arches the proportion superelevation/radius is **less** than $\frac{1}{2}$.
Diagram: G. Kaplan.

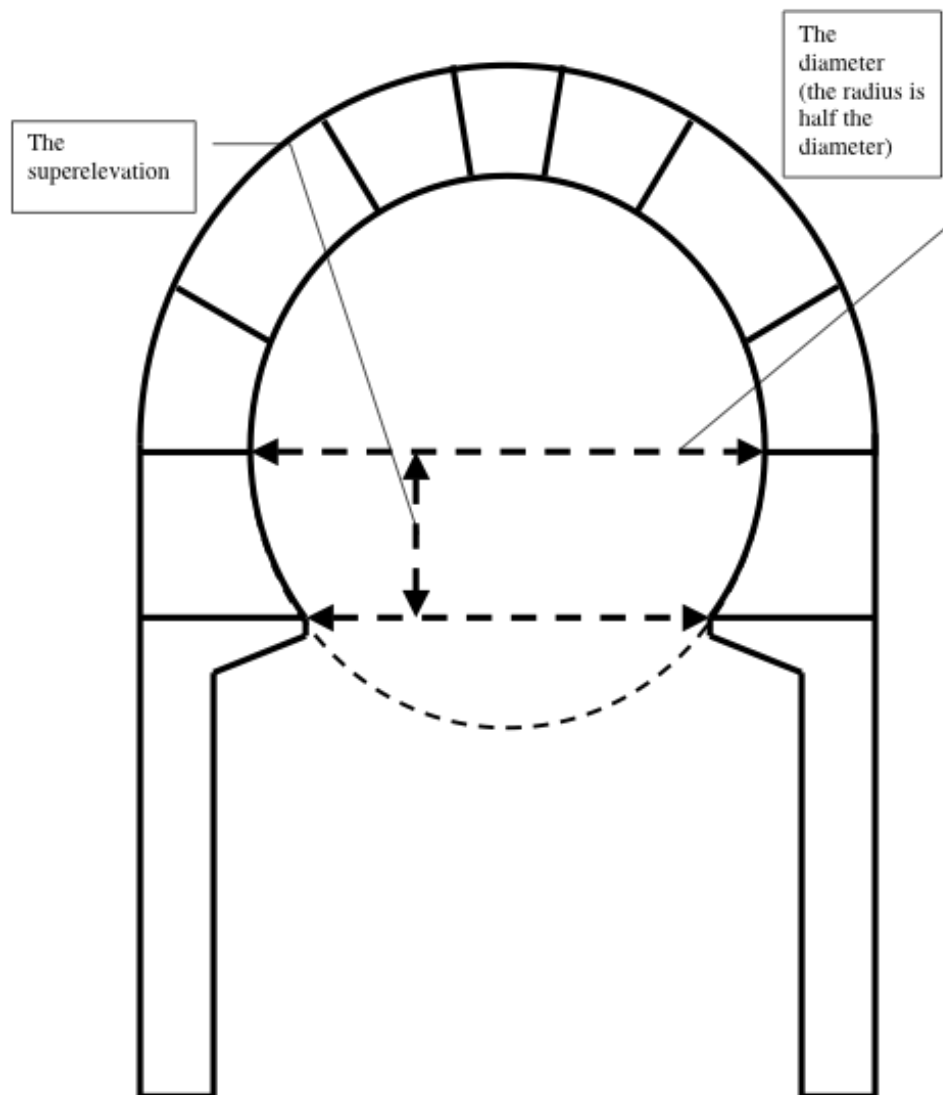


FIGURE 5 In Mozarabic horseshoe arches, the proportion superelevation/radius is **greater** than $1/2$. Drawing: G. Kaplan.

The superelevations possessed by a number of horseshoe arches in San Juan de Baños and the other previously mentioned Visigothic churches (including horseshoe arches over the entrances to apses and those located in other places in these buildings), as well as horseshoe arches that form part of civil architecture (such as two found in the wall around Córdoba), consistently measure less than one half of the radius of the ultrasemicircular shape made by the voussoirs that form them.³² The characteristic Visigothic superelevation, first identified in religious and civil structures by Gómez Moreno,³³ contrasts with the type of superelevation

³² Although not formed by voussoirs, the horseshoe arches in Cantabrian cave churches also contain superelevations that measure less than one half of their respective radiuses.

³³ Gómez Moreno, "Excursión."

common to horseshoe arches used in subsequent architecture. While it is impossible to determine the precise moment when styles changed, the transition to a longer superelevation appears to coincide with the spread of Islamic rule and culture through the Peninsula in the 700s. In Mozarabic and Islamic buildings erected during the next few centuries, which include churches such as Santa María de Melque (Toledo), Santiago de Peñalba (León), San Cebrián de Mazote (Valladolid), and San Millán de Suso (La Rioja), as well as Islamic structures such as the Alcázar of Córdoba, and the Aljafería Palace in the city of Zaragoza, the proportion superelevation/radius is consistently one half or greater.³⁴

The tendency in Mozarabic churches to incorporate elongated superelevations into horseshoe arches was influenced by changing notions regarding interior design in Peninsular Islamic architecture. Whereas the horseshoe arch had been employed in Visigothic churches because of its capacity to obstruct the view from one space to another, Islamic architects recognized that increasing the superelevation, in effect making their horseshoe arches taller, would allow more light to enter interior spaces. The importance of illumination was a component of the culture that Muslims brought to the Iberian Peninsula. This phenomenon manifested itself in a variety of ways including street lighting in Córdoba, a belief among Muslims that peninsular Islamic society was more advanced than that of northern Europe because Spain received more sunlight, and the construction of horseshoe arches with superelevations designed to let in more light than previous arches, an effect perhaps nowhere more evident than in the Mosque of Córdoba.³⁵ Within Mozarabic church architecture, the Islamic technique was likely imitated in order to guide light from naves to apses that were otherwise poorly illuminated, as occurs in San Román de Moroso, in which there is only one very small window in the eastern wall.

Restoration of San Román de Moroso and the Horseshoe Arch

This small window is located in a section of the apse wall that was still standing prior to the aforementioned restoration of San Román de Moroso in the 1980s. The deteriorated state of the building prior to this project is documented in studies published during the early twentieth century by Gómez Moreno and many decades later by María Paz Díaz de Entresotos.³⁶ As Gómez Moreno observed, the roof of San Román de Moroso had collapsed by the time he analyzed the structure and the floor of the church, exposed to the elements for untold years, was covered with weeds.³⁷ The southern section of the wall that enclosed the apse had also

³⁴ For details on these and other contemporary horseshoe arches, see Caballero Zoreda (“La ‘forma en herradura’”) and Gómez Moreno (*ibid* and *Iglesias mozárabes*).

³⁵ Hitti finds an assertion of Islamic cultural superiority in the words (translated into English by Hitti) of the eleventh-century Toledan thinker Qāsim Ṣāʿid ibn-Aḥmad al-Andalusī, who comments on northern Europeans: “because the sun does not shed its rays directly over their heads, their climate is cold and atmosphere clouded. Consequently their temperaments have become cold and their humours rude.... They lack withal sharpness of wit and penetration of intellect, while stupidity and folly prevail among them” Philip Hitti, *History of the Arabs*, 10th ed. (New York: Palgrave Macmillan, 2002), pp. 526-27.

³⁶ Gómez Moreno, *Iglesias mozárabes* and María Paz Díaz de Entresotos, “La iglesia de Santa María de Lebeña,” *XL Aniversario del Centro de Estudios Montañeses* 2 (1976): pp. 194-226.

³⁷ A barrel vault modeled on the original one was added during the restoration of the church.

disappeared, although the walls that surrounded the nave remained intact. The horseshoe arch over the entrance to the apse, one of two horseshoe arches that had formed part of the building, was still standing, while the other, once situated above the entrance to the church, had been dismantled for the purpose of utilizing the voussoirs in a nearby farm.³⁸

Further deterioration occurred to San Román de Moroso between the publication of Gómez Moreno's study and the visit by Díaz de Entresotos in the 1970s. This deterioration greatly affected the horseshoe arch in the wall that divided the apse from the nave, whose voussoirs had fallen to the ground. The only original component that remained in place was one of the cymas, which used to rest immediately below the springers and which were designed to extend horizontally to the points at which the springers achieve their maximum closing effect. Beneath the horizontal extensions of the cymas once rested vertical columns, now lost.³⁹ Díaz de Entresotos recounts that a local resident claimed to have seen this horseshoe arch intact, which must have occurred before Gómez Moreno made his observations.⁴⁰ For some unknown reason, the transfer of the stones to a nearby farm did not occur in the decades following Gómez Moreno's study, and the original voussoirs that were located were incorporated into the reconstructed entrance during the restoration of San Román de Moroso.

A comparison between the observations and photos provided by Gómez Moreno and Díaz de Entresotos and the current condition of San Román de Moroso indicates that the restoration was executed faithfully. With the exception of portions of the apse and the entrance, the walls that stand today, solidly built from sandstone blocks, are original. A large section of the wall that encloses the apse is also original, and my own observations confirm those made by Díaz de Entresotos concerning the accuracy of Lampérez y Romea's claim that the floor of the apse was horseshoe shaped during the early twentieth century.⁴¹ As was the case when both Gómez Moreno and Díaz de Entresotos published their studies, the apse is a rectangular space and there is no indication from its current condition (or from the observations made by these scholars with respect to its prior condition) that it was horseshoe-shaped before it was restored.

Gómez Moreno records the Mozarabic character of the horseshoe arch over the entrance to the apse in San Román de Moroso prior to its restoration, and prior to the time it collapsed. While he does not reveal the actual measurements taken, Gómez Moreno found the proportion of this horseshoe arch's superelevation/radius to be 3/5.⁴² In *Historia de Cantabria*, completed very soon after the restoration of San Román de Moroso, the proportion is also listed as 3/5, although the dimensions necessary for determining that the superelevation occupies 60% of the radius are, again, not disclosed and it is unclear whether measurements of the refurbished arch were taken or whether the conclusions made previously by Gómez Moreno are merely repeated.⁴³

³⁸ Gómez Moreno, *Iglesias mozárabes*, p. 286.

³⁹ Similar columns also adorned the horseshoe arch over the entrance to the church.

⁴⁰ Díaz de Entresotos, p. 221.

⁴¹ Díaz de Entresotos, p. 221, Lampérez y Romea, p. 240.

⁴² Gómez Moreno, *Iglesias mozárabes*, p. 285.

⁴³ García Guinea, p. 324.



FIGURE 6 Horseshoe arch over the entrance to the apse in the Church of San Román de Moroso. Photo: G. Kaplan.

Recent Measurements of the Horseshoe Arches in San Román de Moroso

The measurements that I took in July of 2010 demonstrate that the refurbishment of both arches has not erased their Mozarabic influence. The interior arch that divides the apse from the nave (**figure 6**) possesses a radius of eighty-five centimeters and a superelevation of fifty-one

centimeters, resulting in a proportion of 3/5. This confirms previous findings and it merits pointing out that this proportion is identical to that possessed by the horseshoe arches in Santa María de Lebeña, which was also built during the tenth century.⁴⁴ Santa María de Lebeña, San Román de Moroso and Santa Leocadia are the only remaining Mozarabic churches in Cantabria, although there undoubtedly existed others that were constructed as a consequence of the many monastic foundations that took place. Santa Leocadia preserves little of its original structure, with the only surviving sections from the tenth century being the apse and the southern part of the nave.⁴⁵ Santa María de Lebeña, while a more complex structure with three apses and three naves, shares features with San Román de Moroso, including the proportion superelevation/radius of 3/5 and the design of the cymas employed in the horseshoe arches, which in both structures are carved in a manner that resembles an inverted pyramid (in the style common to Leonese tenth century Mozarabic churches such as San Román de Hormiga and Santa María de Bamba.⁴⁶

My measurements of the horseshoe arch over the entrance to San Román de Moroso (**figure 7**) also confirm that it was fashioned according to the Mozarabic style. This arch, standing some two and three-quarters meters tall, has a radius of sixty-three centimeters and a superelevation of forty-four centimeters, which results in a proportion of 7/10, within the range that defines a Mozarabic horseshoe arch. It is interesting to speculate whether the increased superelevation in this arch with respect to the one on the inside is due to the effects of the restoration during the 1980s. Perhaps during the reconstruction of the entrance the application of mortar slightly enclosed the ultrasemicircular form, as such eliminating a few centimeters from the curvature and thus increasing the space occupied by the superelevation (and increasing the proportion superelevation/radius). At the same time, the larger superelevation may well have formed part of the original construction, and it should be noted that other Mozarabic churches, such as San Cebrián de Mazote, also contain horseshoe arches of different proportions.⁴⁷

Conclusion

The configuration of San Román de Moroso and other Mozarabic churches, in particular the placement of a horseshoe arch over the entrance to the nave, recalls the division of interior spaces that became incorporated into architecture as a physical representation of Visigothic conciliar decrees. At the same time, the modification of the horseshoe arch in Mozarabic structures reflects the nature of the Islamic impact on Christian church architecture. While for centuries Islamic rule on the Peninsula was characterized by tolerance among Muslims and their

⁴⁴ Díaz de Entresotos, pp. 200-01, 214.

⁴⁵ Campuzano Ruiz, p. 316.

⁴⁶ Gómez Moreno, *Iglesias mozárabes*, pp. 191-92, 200. For a photo of one of the cymas in Santa María de Lebeña, see García Guinea, p. 323.

⁴⁷ Lampérez y Romea, p. 151.



FIGURE 7 Horseshoe arch over the entrance to the Church of San Román de Moroso. Photo: G. Kaplan.

Mozarabic and Jewish subjects, who were permitted to maintain their churches and synagogues, these groups could only gain certain social privileges upon conversion to Islam, and in the ninth century a wave of religious persecution caused many Mozarabs to suffer martyrdom or escape to the north. Any threat with which Muslims were viewed was undoubtedly tempered by an admiration for their advanced culture, which is revealed in the manner by which Mozarab refugees disseminated the culture with which they had come into contact in the southern part of the Peninsula as they continued to practice the rite whose parameters were defined in Visigothic times. Although they have been refurbished, the dimensions of the horseshoe arch over the division between the apse and nave in San Román de Moroso and the one over the entrance exhibit this tendency and, by extension, indicate that its builders were Mozarabs who had emigrated to Cantabria from Muslim Spain.

While documentation is often available to confirm the age of major churches, in the cases of minor structures such as San Román de Moroso architectural methods may be scrutinized in order to arrive at sound conclusions. Although the date of this church's edification is undocumented, the dimensions of its horseshoe arches exemplify Mozarabic church architecture during the first few centuries after the inception of Islamic rule. In this manner, an analysis of the horseshoe arches of San Román de Moroso according to the methodology described above

reveals the significant role that medieval archaeology can play assigning dates to the construction of churches. In the case of San Román de Moroso, the building obviously predates the first documented reference to it from 1119 and it is logical to speculate that it is contemporary to Santa María de Lebeña, whose foundation in 925 is documented.⁴⁸ When considered in the context of the social landscape during the early centuries of Islamic rule on the Peninsula, the increased superelevation typical to Mozarabic horseshoe arches such as those discussed in the present study speaks to the synthesis between Islamic and Christian traditions that defined Mozarabic culture.

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Abstract

This study focuses on architectural features that enlist the medieval church of San Román de Moroso (Cantabria, Spain) as a monument constructed according to the Mozarabic style. After a review of the history of San Román de Moroso, special attention is paid to the manner by which its horseshoe arches exhibit tendencies that reflect the Islamic influence on medieval Spanish church architecture. In particular, the mode of configuring interior spaces that was initially employed in Visigothic churches as a visual representation of a divinely inspired centralized political authority was impacted by techniques popularized after the inception of Muslim rule on the Iberian Peninsula in the early 700s. The church of San Román de Moroso is ultimately seen as a structure that, in spite of a restoration during the 1980s, conserves in its horseshoe arches the legacy of the dissemination of Islamic culture among Christians (or Mozarabs).

Key words

horseshoe arch, Mozarabic culture, Spain, Cantabria, San Román de Moroso, medieval church architecture