Research Article

A Study of the Geographical Distribution of the Tombs of the Carolingian Nobility in the Ninth Century and Their Historical Significance

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ARTICLE INFO	ABSTRACT
	This paper examines the geographical distribution of the tombs of Carolingian nobles in the 9th century and their historical significance. The ninth century was the glorious period of the Carolingian Empire, characterized by social, political, and cultural changes. Through the systematic analysis of the tombs of nobles in different regions, the relationship between geographical distribution and political and religious factors is revealed. The study found that works of art, such as tomb structures, funerary goods, and epitaphs, all reflect social hierarchies, religious beliefs, and cultural exchanges at the time. In addition, the dissertation explores the impact of the tombs of Carolingian nobles on historical memory, emphasizing their importance as historical records. The use of a multidisciplinary approach provides a rich research perspective, revealing challenges such as data collation and cultural differences. In this paper, GIS 2.0 software is used for DEM data processing, and solidworks 2006 is used for structural analysis of ancient tombs, and the construction materials, shapes, decorations and colors of ancient tombs are studied. At the same time, the microstructure was observed with a 10*70x HD microscope (Panasonic, Japan, K2020 type). The results show that the ancient tomb is made of granite, and the overall structure is stable, which can keep the internal temperature constant. The shape is mainly arched, between 10~20m underground, and the ventilation is good; The decorative pattern is mainly a cross flower, and the colors are mainly yellow, red, and brown, suggesting the Christian faith. This shows that the geographical distribution of the tombs of the Carolingian nobles is closely related to the local building materials, embalming of corpses and religious beliefs. **Keywords:** Ninth Century, Carolingian Empire, Aristocracy, Tombs, Geographical Distribution, Historical Significance.

INTRODUCTION

The Carolingian Empire, the most important political entity in medieval Europe, was key in shaping European history during its glorious ninth century. The ninth century, from 800 to 899 AD, was the peak of the empire and a time of change fraught with political, social and cultural upheaval. As a special historical relic of this period, the noble tomb embodies the social culture (Coupland, 2023), politics and economy of the time. It has particular historical significance for understanding the development of the Carolingian Empire in the ninth century. The Carolingian Empire in the ninth century spanned the European continent and not only crossed the vast territory of the continent geographically (Danovi, 2023) but also made outstanding contributions politically, religiously and culturally, and the geographical coverage is shown in Figure 1.

Figure 1. Geographical Location of the Carolingian Empire

As seen in Figure 1, the Carolingian Empire, which covered most of Europe, including what is now Germany, France, and Italy, established a centralized empire through war governments in Europe. As the core power of the Carolingian Empire, the aristocracy had a way of life, values and social status that would be reflected in the tombs. Therefore, an in-depth study of the geographical distribution of the tombs of the Carolingian nobility in the ninth century can not only reveal the structure and evolution of the society at that time but also provide support for the study of burial culture and let people better understand the life and beliefs of the Carolingian Empire aristocracy (Ganz, 2023). The systematic study of the geographical distribution and historical significance of the noble tombs of the Carolingian Empire in the ninth century has not been thoroughly carried out, and the relevant research of this period plays an important role. Therefore, through multi-disciplinary methods such as archaeology, history and anthropology, this paper delves into the geographical distribution of the noble tombs of the Carolingian Empire in the ninth century and explores the historical significance behind these tombs, providing a new perspective for understanding the history of the Carolingian Empire in the ninth century. Through an in-depth study of the geographical distribution of the noble tombs of the Carolingian Empire in the ninth century and their historical significance, we can better grasp the characteristics and development trends of European society in this period. At the same time, it is also important to better understand the life of the aristocracy, which is of great significance for a more comprehensive understanding of medieval European history and the development of aristocratic culture (Garay, 2023).

FEATURES OF THE GEOGRAPHICAL DISTRIBUTION OF THE TOMBS OF THE NOBILITY OF THE CAROLINGIAN EMPIRE

Background of Carolingian Imperial Burial Culture

The rise of the Carolingian Empire in the ninth century marked an important stage in medieval European history, encompassing large territories during its glory period and profoundly impacting Europe's political, cultural, and religious landscape. The Carolingian family replaced the Melovichs in 751 to build a large empire that spanned several countries (Genc, 2023), and its influence was not limited to domestic affairs; it also occupied an important position in international affairs. In the ninth century of the Carolingian Empire, Emperor Carolingian I and subsequent emperors, such as Louis I and Charles II, laid the political and military foundations of the empire, and the dynastic genealogy is shown in Figure 2.
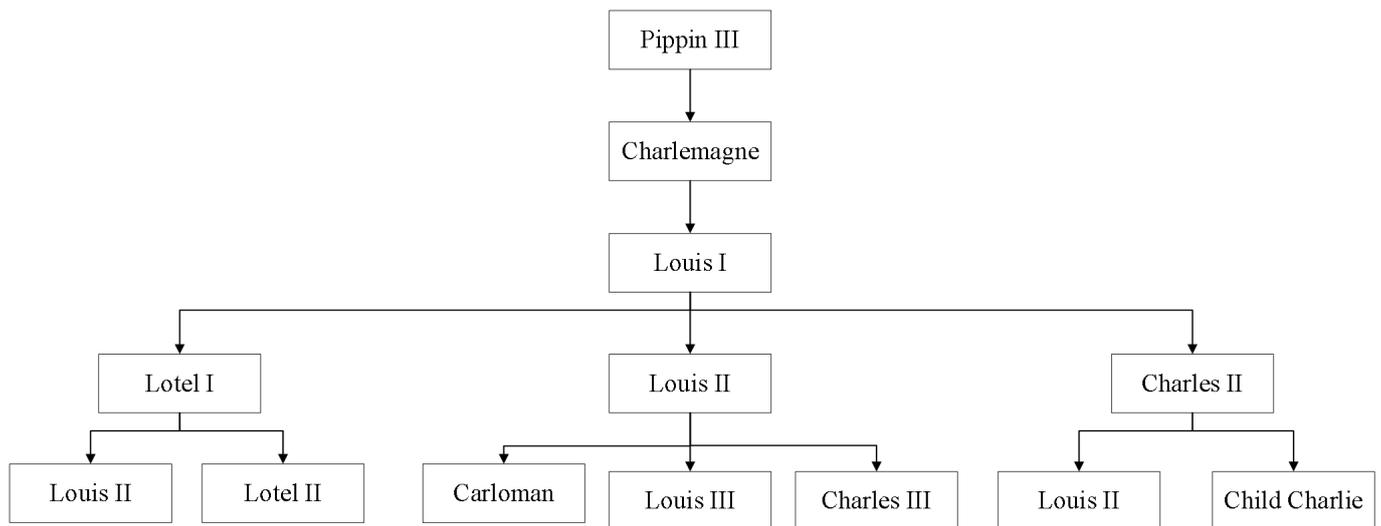
Figure 2. Genealogy of the Carolingian Royal Family

As can be seen from Figure 2, in the ninth century, the Carolingian Empire established its authority and unity through internal state institutional reform and external military expansion and successively experienced dynasties such as Charles, Louis, and Lothair. At the same time, through continuous expansion, the classes and cultures within the empire also changed and impacted the social structure of the time. At this time, the aristocracy became important in maintaining the empire's stability and played an important role in the political, economic and cultural fields. The rise and development of the Carolingian Empire in the ninth century was closely linked to its aristocracy. The aristocracy played a central role in the construction of the empire; they had a wide range of territories and powers, and they not only participated in government affairs but also played an active role in the development of local society and cultural inheritance (Neyrinck, 2023). Thus, the aristocracy of the Carolingian Empire in the ninth century played an important role in politics and the military, and their lifestyle, religious beliefs and cultural aesthetics were reflected at that time.

The Political and Cultural Development of the Carolingian Empire in the 29th century

The ninth century was a pivotal period in the history of the Carolingian Empire, whose political, social and cultural context directly influenced the characteristics and geographical distribution of noble tombs. During this period, the Carolingian Empire played an important role in the European political scene and underwent major changes.

Centralization and Decentralization

At the beginning of the ninth century, the Carolingian Empire fell into division and civil war, and the weakening of imperial power led to the rise of local powers everywhere. However, thanks to the efforts of the Carloman and Louis families, the empire gradually re-established its centralization and restored a unified state system. In this process, the aristocracy, as local rulers and supporters of imperial power, played a key role in the reconstruction of the political system (Ó Súilleabháin, 2023).

The Social Structure is Diverse

Ninth-century society presented diversity and complexity. The feudal system gradually took shape, and the aristocracy gained political and economic power through the territorial system, and their status was not only determined by blood, but also closely linked to land ownership and government positions. Social classes, such as peasants and slaves, had a relatively low status, and despite the important role these classes played in society, the aristocracy remained the core of ninth-century society (Rio, 2023).

Cultural Centralization with Religion as the Core

The ninth century was an important period for the expansion of Christianity in the Carolingian Empire, and religion and politics were closely intertwined. The Carolingian emperor practised Christianity as the state religion, and the aristocracy generally believed in Christianity and played a driving role in cultural inheritance. The importance of education was gradually recognized, and the emperor and aristocratic families supported the establishment of the academy and trained talented clergy and intellectuals.

GEOGRAPHICAL DISTRIBUTION OF THE TOMBS OF THE CAROLINGIAN NOBILITY IN THE NINTH CENTURY

Research Methods

In this paper, GIS 2.0 software is used for DEM data processing, and solidworks 2006 is used for structural analysis of ancient tombs, and the construction materials, shapes, decorations and colors of ancient tombs are studied. At the same time, the microstructure was observed with a 10*70x HD microscope (Panasonic, Japan, K2020 type). The results show that the ancient tomb is made of granite, and the overall structure is stable, which can keep the internal temperature constant. The shape is mainly arched, between 10~20m underground, and the ventilation is good; The decorative pattern is mainly a cross flower, and the colors are mainly yellow, red, and brown, suggesting the Christian faith. This shows that the geographical distribution of the tombs of the Carolingian nobles is closely related to the local building materials, embalming of corpses and religious beliefs.

Sporadic Geographical Extent

The noble tombs of the Carolingian Empire in the ninth century can be found throughout the continent, covering several countries and regions. Table 1 shows some typical areas and the corresponding noble burials. Notably, the noble tombs of different regions show significant differences in architectural style, burial structure and funerary objects. This diversity reflects the regional and cultural exchange of the Carolingian Empire while also revealing the characteristics and development of the various regions of society at that time.

Table 1. Geographical Distribution of Noble Burials in the Carolingian Empire

Region	Country	Noble burial characteristics and Differences
West Flanders Region	Kingdom of France	Romanesque tombs, commonly found near churches.
Alps	Holy Roman Empire	Magnificent mountain cemetery, with different regional characteristics such as Germany and Italy.
Spain and Portugal	Kingdom of Asturias	The catacombs are complex and magnificent, showcasing Spain's unique architectural style.
Northern Italy	Kingdom of Lambadi	Stained glass windows and mosaic decorations reflect the local Romanesque art style.
German region	Kingdom of Saxony	The use of stone carvings and metal crafts presents elements of the prevailing Germanic culture.

Characteristics and Differences of Burials in Different Regions

The geographical distribution of the noble tombs of the Carolingian Empire in the ninth century shows a regional diversity, highlighting the cultural, social and geographical characteristics of different regions at that time. In a typical area, for example, the tombs of nobles in the West Flanders (Kingdom of France) are mainly located around churches, and their architectural styles often exhibit Romanesque features such as square structures, vaults and arches, which reflect the Roman traditions and Christian influences of the region. The tombs of the nobility in the Alps (Holy Roman Empire) are usually located in the mountains due to their unique geographical conditions, and their burial chambers may be embedded in the mountains or constructed in rock (Schroeder, 2023), showing a fusion of German and Italian regional characteristics. The burials of the nobility in Spain and Portugal (Kingdom of Asturias) often used crypts, opulent interiors, and artistic elements such as carvings and frescoes to express the Spanish religious and artistic tradition. The noble tombs of the Kingdom of Lambard combine Roman and Germanic elements, and the interiors are often characterized by stained glass windows and mosaics, reflecting the cultural characteristics of northern Italy. The burials of the nobility in Germany (Kingdom of Saxony) emphasize stone carvings and metalwork, and the rich funerary offerings reflect the uniqueness of Germanic culture, as shown in Figure 3.

Figure 3. Pure Gold Angel Cup in the Tomb

The angelic decoration in Figure 3 reflects the Christian belief of the Carolingian Empire, where nobles believed they could enter heaven after death and were guided by angels. Some noble tombs use stone sculptures in the hope of immortality or resurrection, as shown in Figure 4.

Figure 4. Sculpture of Louis III

The sceptre in Louis III's hand and the crown on his head represent the divine right of kings, reflecting the influence of Christianity on politics and imperial power at that time. The characteristics of the burials in different regions of the Carolingian Empire not only highlight the diversity of the Carolingian Empire but also further reveal the identity, religious beliefs and cultural inheritance of the local aristocratic society.

Geographical Distribution Reflects Differences in Politics and Religion

The mausoleums of the Carolingian nobility of the ninth century were geographically scattered and associated with political forms, religions and human culture. Noble cemeteries not only have Carolingian style but also regional characteristics, indirectly reflecting different regions' political and cultural characteristics. The rulers of the Carolingian Empire at different times also took different political measures, and their cemeteries were to consolidate their political position. For example, the French kings focused on religion, and their cemeteries were adjacent to churches. Part of the Carolingian Empire had relatively scattered noble burial grounds but still focused on their status and imperial power. Thus, the cemetery of the Carolingian Empire is adjacent to the church, and the architectural style, epitaph, and funerary objects are still associated with the sect. In addition, the noble

cemetery corresponds to nature, climate, and landscape and has a regional style and regional form in terms of cemetery structure and burial form. There are differences in the design and brick carving of cemeteries in different regions; for example, many brick carving designs appear in mountain burial chambers.

ARCHAEOLOGICAL DISCOVERY OF THE TOMBS OF THE NOBILITY OF THE CAROLINGIAN

Overview of Typical Cemeteries

The Abbey Cemetery of Saint-Denis is a typical Carolingian aristocratic burial ground, located about 10 km from the center of Paris. It is distributed in the surrounding area of the monastery. The cemetery mainly buries Frankish kings, emperors and members of the nobility, and has a typical representative significance.

Analysis of Burial Structure and Funerary Objects

Burial Structure

The burial structure of the cemetery of the Abbey of Saint-Denis is typical of the noble tombs of the Carolingian Empire, representing the religion and culture of the time. The study of the structure of the tomb not only reveals the architectural structure of the Carolingian aristocracy at that time but also more profoundly reflects the production technology, religious beliefs, and culture of the Carolingian era. The burial structure consists of the main room, the side room, and the auxiliary room. The burial chamber is located at the bottom of the abbey church, through steps into the ground, and the stone structure is hard, made of clay and loess, as shown in Figure 5.

Inside the burial chamber
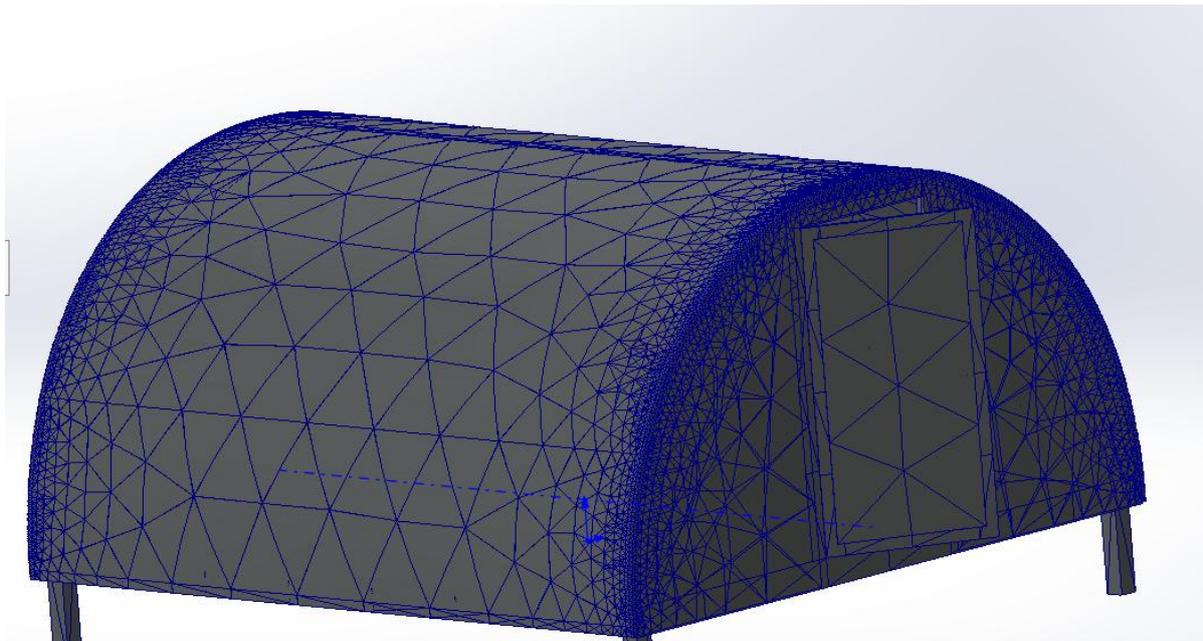
The overall structure of the burial chamber
The overall structure of the cemetery

Figure 5. A Typical Stone Burial Chamber of the Abbey of Saint-Denis

The burial chamber emphasized the function of the main chamber and reflected the nobility's belief in Christianity, and the tomb was decorated with frescoes and carvings. The burial chamber with small promenades, as well as worship huts, reflects the daily life behaviour of the nobility and also reveals the influence of Christianity on the Carolingian aristocracy. At the same time, the tomb structure is simple; the whole is arched, mainly to improve the stability of the burial chamber, but also represents the main form of architecture at that time.

Burial Pattern

Tomb pattern is an ancient architectural decoration technique; its main purpose is to add beauty and mystery to the building, but it also has a certain religious, cultural, historical, and symbolic significance. The tomb originated in the Roman period and was later widely used in the early and middle Carolingian period, mainly to highlight the dignity of the Carolingian nobility. The burial patterns are mainly impressions, reliefs (Yan, 2022), openwork, round carvings and stacking. Rui beast brick carvings are mainly impressions, relief carvings, round carvings and open-cut carvings, and fewer stacking methods exist. The materials of the burial pattern are mainly clay, loess, or granite. In the tomb pattern, Christ, the Virgin and the angels are the main ones, playing the role of worship and prayer. Different patterns have different forms in the decoration, as shown in Table 2.

Table 2. Patterns in the Cemetery of the Abbey of Saint-Denis

Pattern content	Painting	Relief	Hollow	Printed
Jesus	3	7	3	0
Virgin	1	3	4	0
angel	1	1	0	0
tale	3	0	0	1

From the data in Table 2, it can be seen that Jesus' printing method is 3, the phoenix angel and the Virgin are 1 each, the story is 3, in terms of relief and openwork, Jesus is 3, 3, 5, 4, and the angel and story are 1, 0, 0, 0, 0, indicating that Jesus, as an important god of Caroling, uses complex reliefs and openwork, and Christianity has a prominent position in the Carolingian nobility, and the story, Angels are used as secondary contents in the form of printing and painting.

EM Scan of Cemetery Tiles

The sample was scanned by electron microscopy, of which there were 11 main chambers and 6 secondary chambers, and the scanning results are shown in Figure 6~7.
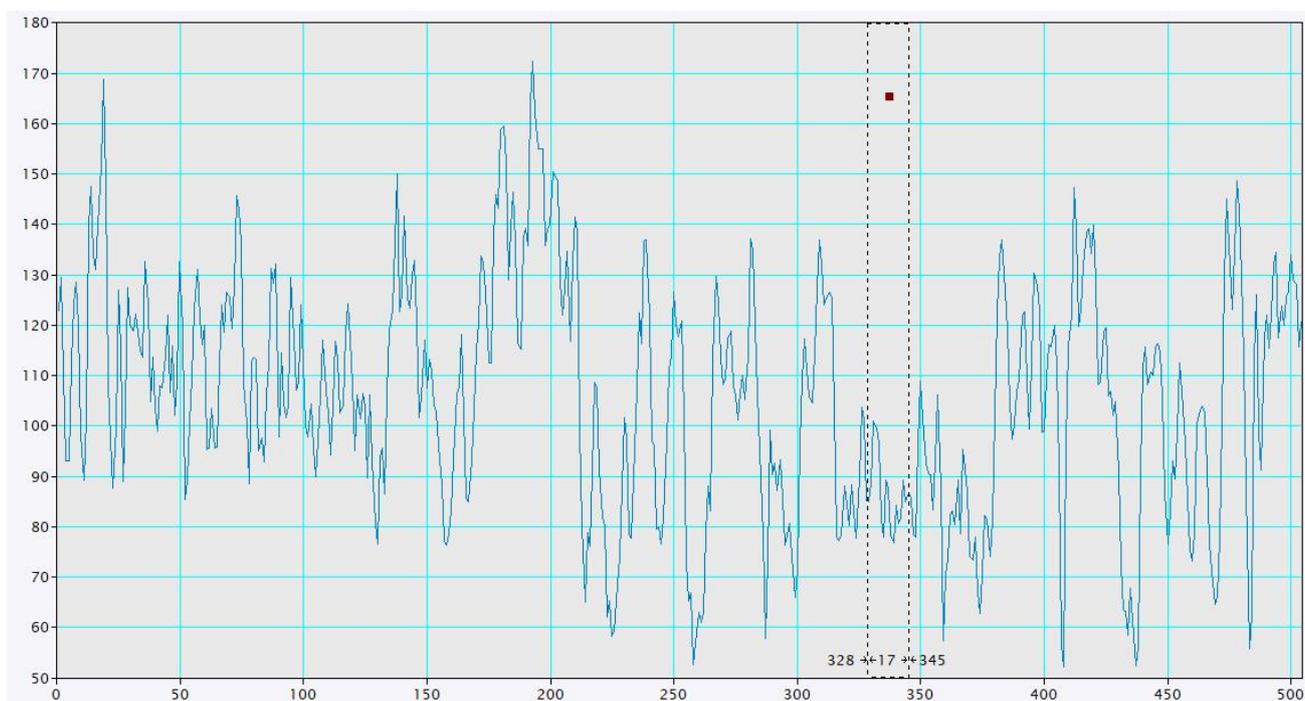
Figure 6. Electron Microscopy Scan Results of Main Chamber Bricks

As can be seen from Figure 6, the waveform diagram of the main chamber brick is relatively regular, the waveform amplitude is small, and the belt length is 345nm, indicating that the material of the main chamber is densely packed. The holes are neatly arranged, which verifies that the material of the main chamber is granite. The results of the secondary chamber are shown in Figure 7.
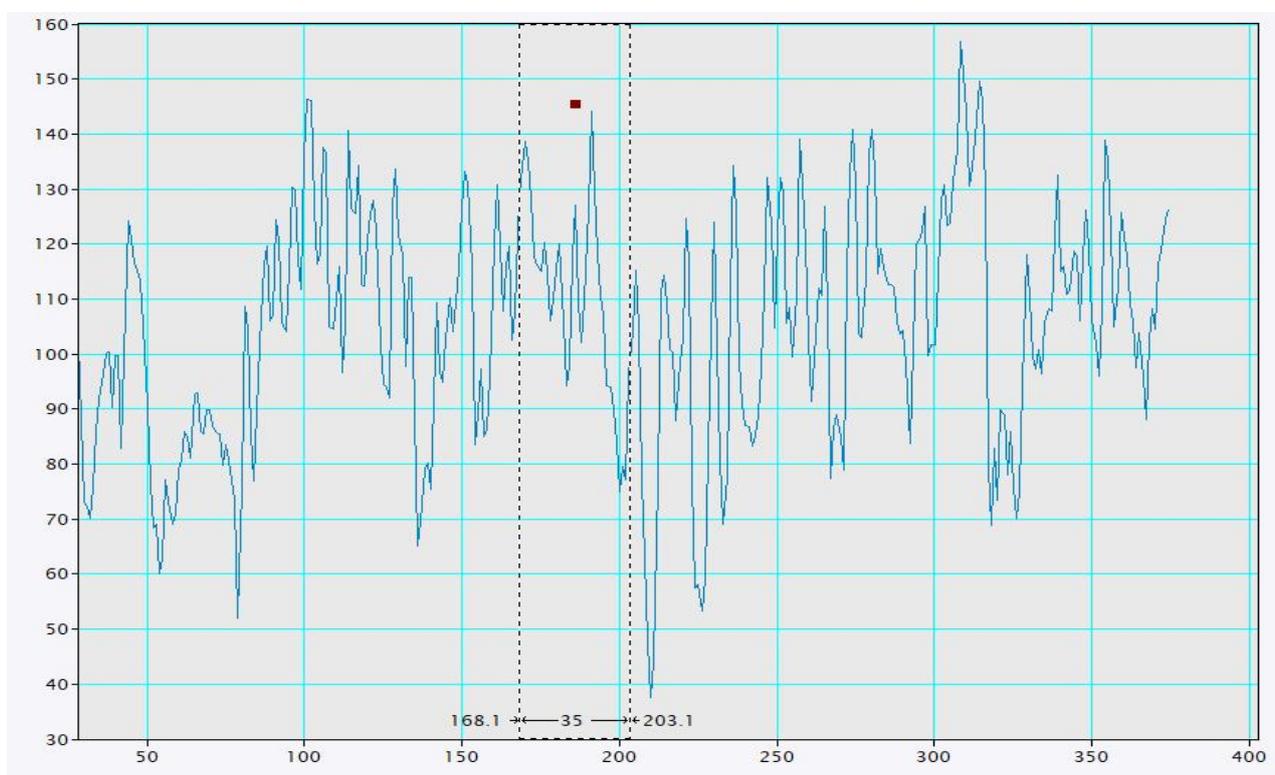

Figure 7. Results of chamber brick electron microscopy

It can be seen from Figure 7 that the waveform of the secondary chamber brick is chaotic, and the band length is 203.1nm, which further indicates that the material of the secondary chamber brick is loose, the gap arrangement is irregular, and there is a problem of shape confusion. Relatively speaking, the material of the

secondary chamber bricks is poor, mainly made of clay and yellow clay.

Exquisite Funeral Goods

As can be seen from Figure 6, the waveform diagram of the main chamber brick is relatively regular, the waveform amplitude is small, and the belt length is 345nm, indicating that the material of the main chamber is densely packed. The holes are neatly arranged, which verifies that the material of the main chamber is granite. The results of the secondary chamber are shown in Figure 7.

Exquisite Funeral Goods

The cemetery of the monastery of Saint-Denis contains a large number of funerary objects, reflecting the social prosperity, Christian development, and political forms of the Carolingian Empire. Funerary objects were articles used in the early days of the nobility and were representative of Carolingian production techniques, reflecting the level of development of the Carolingian Empire in the political, economic and cultural fields. First of all, gold and silver jewelry accounted for a relatively high proportion of funeral goods, about 60%. Jade is a symbol of status and connotation, accounting for 30%. At the same time, the funerary objects contain exquisite and ornate portraits, carvings, etc., representing the exquisite skills of the time and highlighting the luxurious life of the aristocratic society. Secondly, swords and bows accounted for 10% of the funerary goods, indicating the heroic performance of the nobility on the battlefield and a continuation of the expansion ideas of the Carolingian nobility. Among them, the level of sword production is commensurate with the status of the deceased, and it is also an important wealth of the nobility. In addition, jewelry and jade ornaments, as well as ceramics and ornaments with content, carvings, screened the pursuits of the aristocracy at that time, reflecting the culture, interests and aesthetic values of the aristocracy. On the whole, jewelry and jade ornaments were the embodiment of the luxurious and refined life of the social life of the aristocracy, in which the religious content reflected the beliefs of the aristocracy. The funerary objects contain some foreign cultures, such as Roman and Germanic decorations, reflecting the Carolingian Empire's conquest of the surrounding countries and the integration of different national cultures.

## Interpretation of Works of Art such as Epitaphs and Carvings

Epitaphs, carvings and other artworks in the noble burial sites of the Carolingian Empire reflect the values, religious beliefs and artistic styles of the time. Therefore, interpreting the funerary artworks in the burial chamber helps us understand the historical significance and cultural connotation of the noble burial ground more comprehensively.

Epitaph

The epitaph of the cemetery of the monastery of Saint-Denis carries a message to the nobility during his lifetime and a prayer for afterthought. Noble epitaphs bear witness to the aristocracy's achievements and experiences and reflect the cultural, religious and cultural heritage of the Carolingian Empire. Epitaphs are usually written in Latin, using classical rhetoric, elegantly worded, and containing a wealth of information, including culture, humanities, language, history, etc. Part of the content of the epitaph quotes verses from the Bible, which is the embodiment of the nobility's belief and belief. In addition, epitaphs record the deceased's family relations and social status, as well as the family's glorious history and political influence, which helps to understand the institution of intermarriage, kinship and social status between nobles. Among them, the stories of the king, prince, and Jesus are typical representatives, and the result is shown in Figure 8.

Cemetery murals
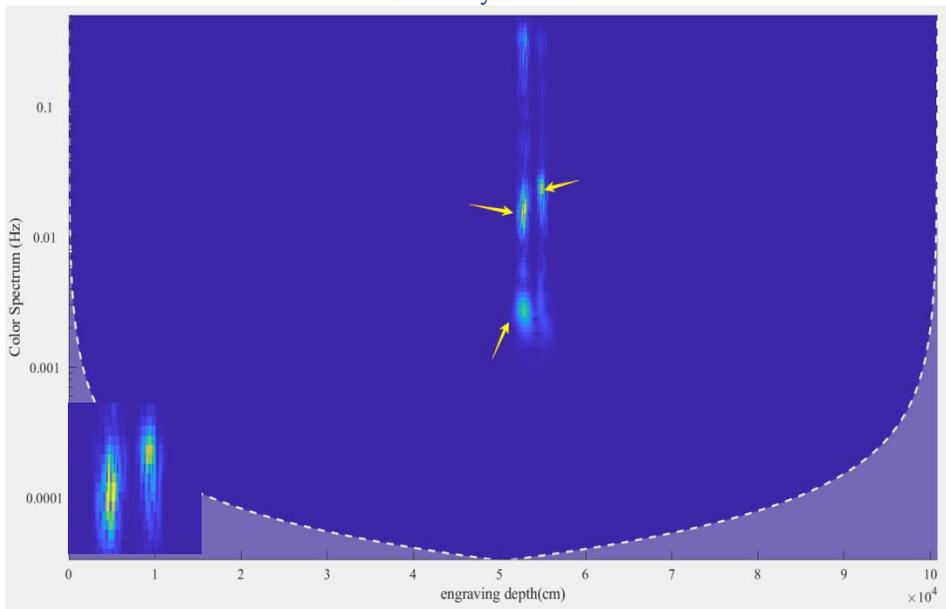
Mural color spectrum

Figure 8. Mural in the Tomb of a Nobleman

The fresco in Figure 8 shows the relationship between the king and his son, who, in turn, was blessed by Jesus and ruled over his fiefdom. At the same time, Jesus influenced each son's actions to regulate their behaviour. The picture depicts the relationship between the sons and the Carolingian Empire and Christianity, highlighting the political and cultural forms of the time. The painting is above the text of the epitaph, showing the contents of the epitaph in a vivid form. At the same time, the dyes in the mural also contain important historical value, and the results of the photo film analysis of the paint surface in Figure 6 are shown in Table 3.

Table 3. Composition Verification of Paint Surface

Evaluate the Content	Iron Oxide	Hematite	Azurite	Lead
Jesus	√	√	√	√
angel	√	√	√	√
disciple	√	√	√	×

Evaluate the Content	Iron Oxide	Hematite	Azurite	Lead
king	√	√	×	×
Son	√	√	√	√
throne		√	√	×

As can be seen from Table 3, the colours of Jesus, the throne, and kings contain materials such as lead and azurite, while angels and disciples do not. It can be seen that the burial chambers of the Carolingian nobility used a large number of precious dyes, which were the main noble dyes at the beginning. Moreover, the combination of dyes is reasonable, making the mural more vivid. Unlike those in other regions, this chamber uses iron oxide as a secondary dye. However, the Carolingian aristocratic model used lead as a dye because lead was widely used as an important mineral deposit during the Roman Empire.

The Art of Carving

The art of carving is an important part of the cemetery of the monastery of Saint-Denis, and some of the exquisite carvings represent the burial craftsmanship, technology, aesthetic ideas and cultural values of the time. These carvings show Christian stories such as the Crucifixion, the Virgin Mary, the saints, etc., showing devotion to the Christian faith. The figures in the carvings come to life and pose in various poses, expressing the artistic style and level of skill of the Carolingian era. At the same time, carvings may also depict the deeds of the deceased's nobility, showing their contributions to the political, military, and cultural fields, thus emphasizing the family's glory. The sarcophagi and steles in the cemetery are also often inlaid with elaborate relief patterns, as shown in Figure 9.
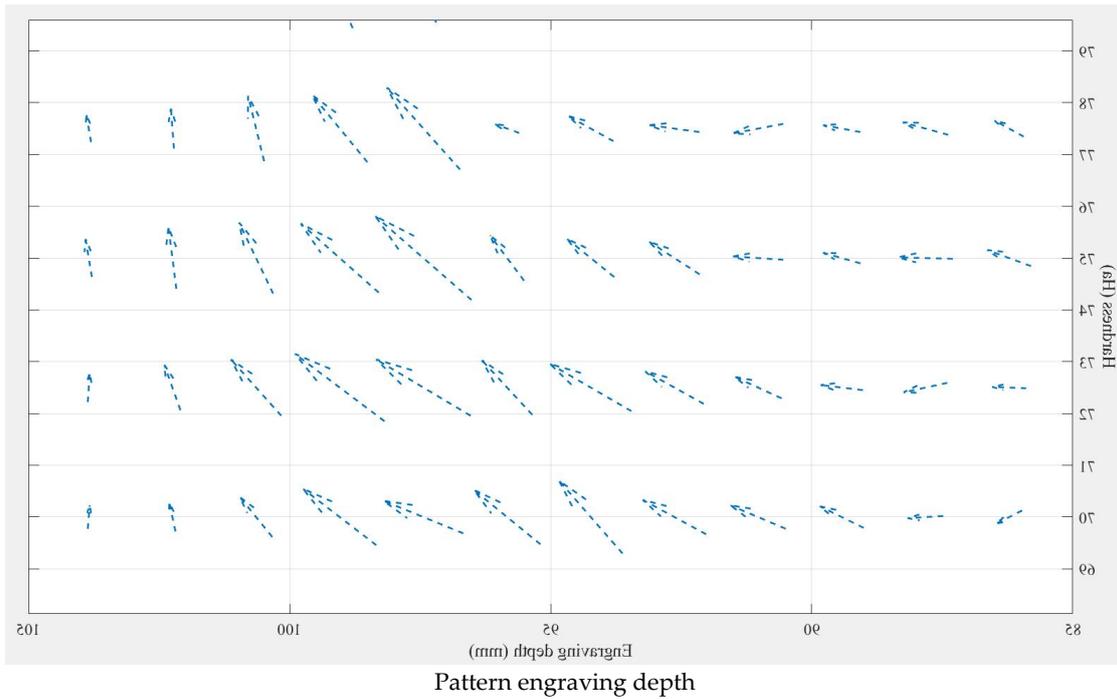

Carved motifs of the cemetery

Figure 9. Typical Stone Relief Carved in the Monastery of Saint-Denis

The motifs in Figure 7 include the family coat of arms, portraits of family members, and motifs symbolizing strength, victory, and glory. The carvings are intricate in detail and eloquently tell the identity and family history of the deceased. In addition, the buildings and architectural decoration of the cemetery may also have carved elements. Carved pillars, floral windows, etc., show the architectural style of the Carolingian era but also express the pursuit of beauty and religious admiration. The results of comparing the compressive strength of different engravings are shown in Figure 10.
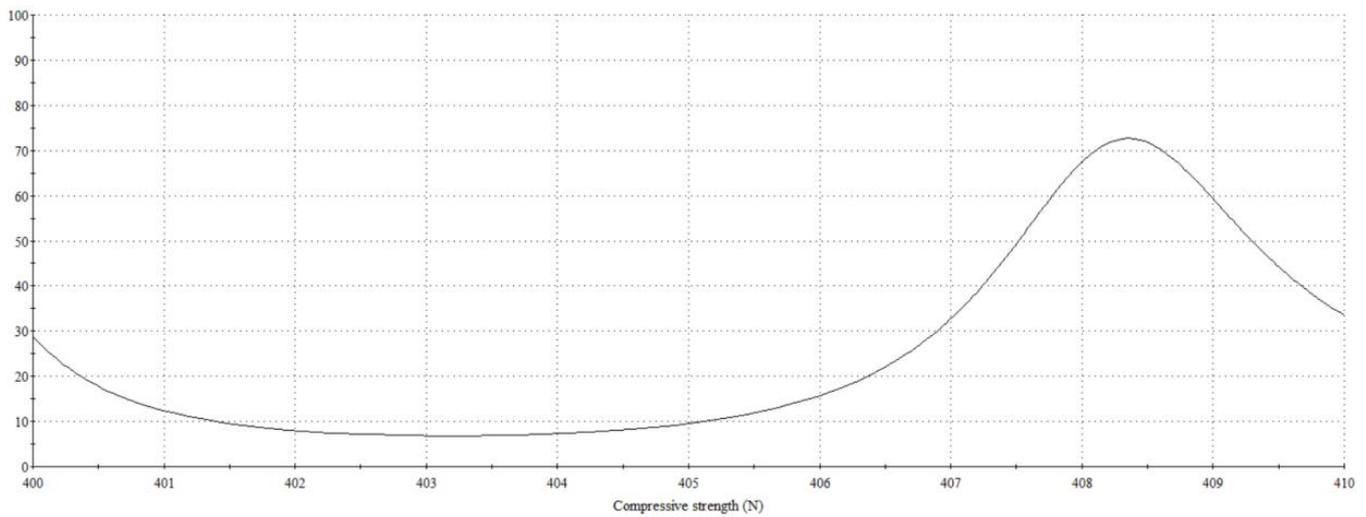

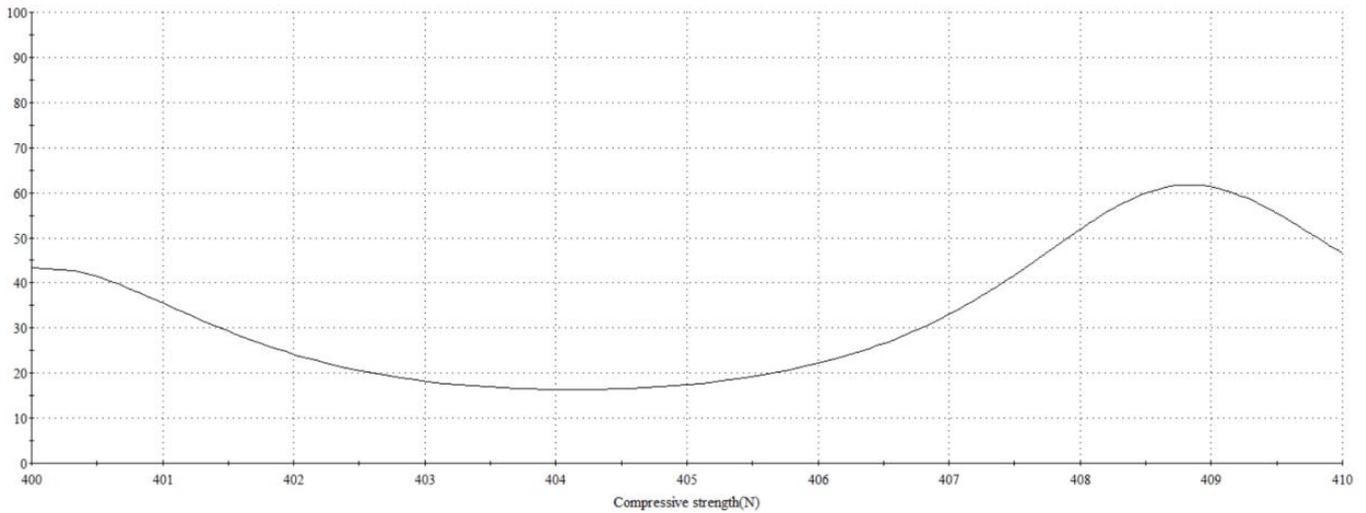Figure 10. Compressive Strength of Burial Chamber Building Results

Figure 11. Compressive Strength of Burial Ornaments

Through the comparison of Figure 10 and Figure 11, it can be seen that the compressive strength of the tomb building is higher, which is significantly higher than that of the tomb decoration, mainly due to the difference in production materials between the two. The compressive strength of the building is between 400~410N, using hard granite, and the decoration contains a large amount of gypsum powder, the compressive strength decreases, indicating that the Carolingian era of buildings sampling simple materials for firing and preparation to improve the hardness of the material.

Integration of Art and Culture

In the Abbey of Saint-Denis cemetery, the fusion of art and culture is prominent, reflecting the multicultural background and religious heritage of Carolingian Empire society. The artwork in the cemetery of the Abbey of Saint-Denis shows the intermingling of several cultural elements, from Roman heritage to Germanic traditions to Christian religion. This cultural fusion is an artistic expression and a comprehensive embodiment of social values, belief systems and aesthetic concepts. The patterns and forms in carvings often bring together elements from different cultures. Romanesque reliefs and Germanic ornaments, as shown in Figure 12.

The exit door of the cemetery
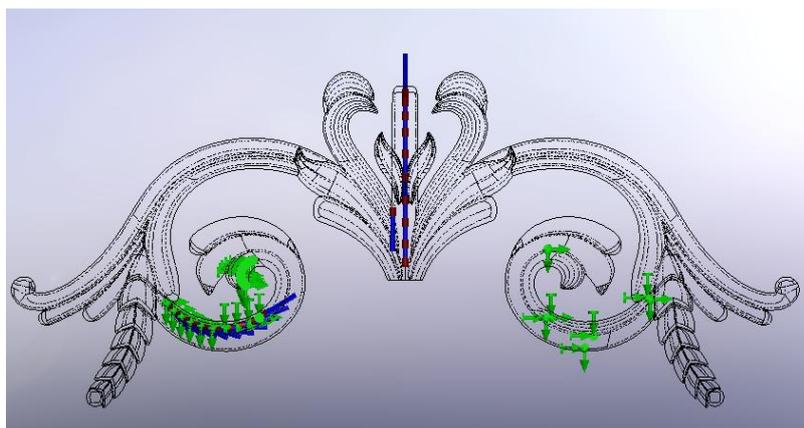
Decorative motifs for modeling

Figure 12. Germanic Ornamentation

In Figure 8, ornamentation and depiction of Christian imagery are intertwined to form a unique artistic style. These fused motifs express the aristocratic deceased's multiple identities and cultural backgrounds, showing their lives and beliefs under the influence of different cultures. At the same time, the words in the epitaph also show the characteristics of cultural integration. Latin was often used to record epitaphs as a religious and academic language. It may have incorporated elements of Germanic languages to reflect the interweaving of different cultural contexts of the time. The fusion of art and culture can also be reflected in architectural styles and decorations. Abbey architecture may have incorporated elements of ancient Roman architecture while reflecting the characteristics of Germanic tribes. Ornamentation, carvings and window glass in architectural decoration may combine motifs from different cultures to show the openness and plurality of Carolingian society.

Based on the above analysis, this paper finds that the geographical distribution of the Carolingian aristocratic cemeteries is consistent, which is mainly reflected in the fact that the building materials of the cemetery are mainly granite, the shape is arched, the decorative pattern is cross, and the mural colors are brown and red, which have Christian characteristics. For a more in-depth analysis, the above factors were analyzed, and the results are shown in Table 4.

Table 4. Influencing Factors of Carolingian Aristocratic Cemeteries

Measurement Items	granite	arched	Decorative patterns	brown	red	Factor validity	consistency	Random Distribution Probability (Pc)	Christian character of the cemetery content	antisepsis
Material	4	4	4	4	4	1.000	unanimous	0.016	1.000	outstanding
Sculpt	4	4	3	4	4	1.000	unanimous	0.016	1.000	outstanding
Color	4	3	3	4	3	1.000	unanimous	0.016	1.000	outstanding

In addition, case studies of cemeteries with different geographical locations are carried out, and the specific results are shown in Table 5.

Table 5. Analysis Results of Specific Cemeteries

Cemetery number	Number of measurements	Factor validity	consistency	Random Distribution Probability (Pc)	Christian character of the cemetery content	antisepsis
3	3	1.000	unanimous	0.1250	1.000	outstanding
3	2	0.667	inconsistency	0.3750	0.467	So so

| Cemetery number	Number of measurements	Factor validity	consistency	Random Distribution Probability (Pc)	Christian character of the cemetery content	antisepsis
4	4	1.000	unanimous	0.0625	1.000	outstanding
4	3	0.750	inconsistency	0.2500	0.667	good
5	5	1.000	unanimous	0.0313	1.000	outstanding
5	4	0.800	inconsistency	0.1563	0.763	outstanding
6	6	1.000	unanimous	0.0156	1.000	outstanding
6	5	0.833	unanimous	0.0938	0.816	outstanding
6	4	0.667	inconsistency	0.2344	0.565	So so
7	7	1.000	unanimous	0.0078	1.000	outstanding
7	6	0.857	unanimous	0.0547	0.849	outstanding
7	5	0.714	inconsistency	0.1641	0.658	good
8	8	1.000	unanimous	0.0039	1.000	outstanding
8	7	0.875	unanimous	0.0313	0.871	outstanding
8	6	0.750	inconsistency	0.1094	0.719	good
9	9	1.000	unanimous	0.0020	1.000	outstanding
9	8	0.889	unanimous	0.0176	0.887	outstanding
9	7	0.778	inconsistency	0.0703	0.761	outstanding

THE HISTORICAL SIGNIFICANCE OF THE STUDY OF THE BURIAL TOMBS OF THE CAROLINGIAN NOBILITY IN THE NINTH CENTURY

### Reveal the Equivalence of Social Hierarchy and Aristocratic Burials

The tombs of the Carolingian nobility of the ninth century are of profound historical significance, not only reflecting the salient features of the social hierarchy of the time but also revealing the pre-eminence of the aristocracy in the political, economic and cultural fields. The historical impact of these tombs goes far beyond individuals but also reflects the reality and changes in the social structure of the entire era. Social hierarchy had an important place in the era of the Carolingian Empire. As representatives of the upper strata of society, the aristocracy enjoyed privileges and resources, and its tombs, to a certain extent, reflected the social hierarchy. The geographical distribution and decoration of noble burial sites are closely related to their position in the social structure.

Reflect the Characteristics of Religious Beliefs and Burial Ceremonies

The mausoleums of the Carolingian nobility in the ninth century include a large number of religious funerary objects, the geographical distribution of the cemetery is adjacent to the religious site, and the burial ceremony is similar to that of the religious ceremony. All of this information reflects the Carolingian Empire's embrace of Christianity. The epitaph of the tombs of the Carolingian nobles often contains verses from the Bible expressing the nobility's desire for eternal life in the afterlife, as well as a firm commitment to the Christian faith, such as the Christ stele of the Carolingian Empire, shown in Figure 13.
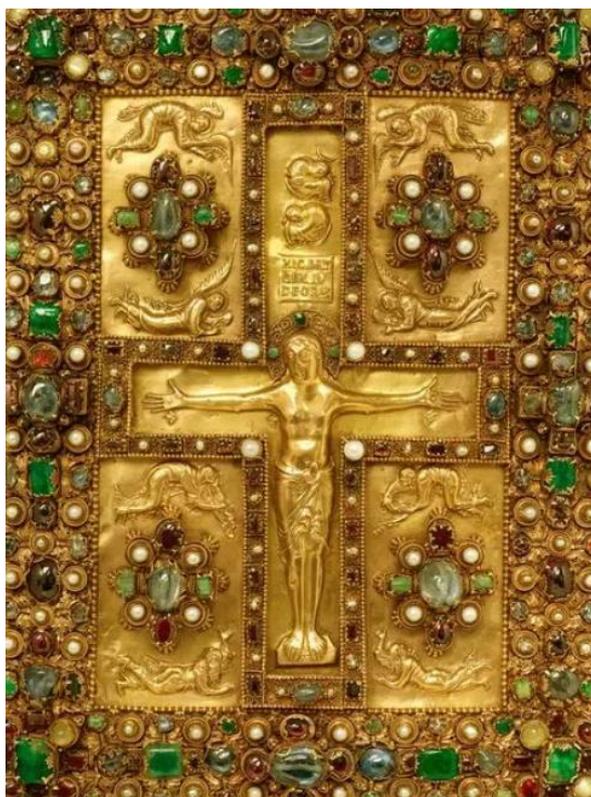
Decorative patterns
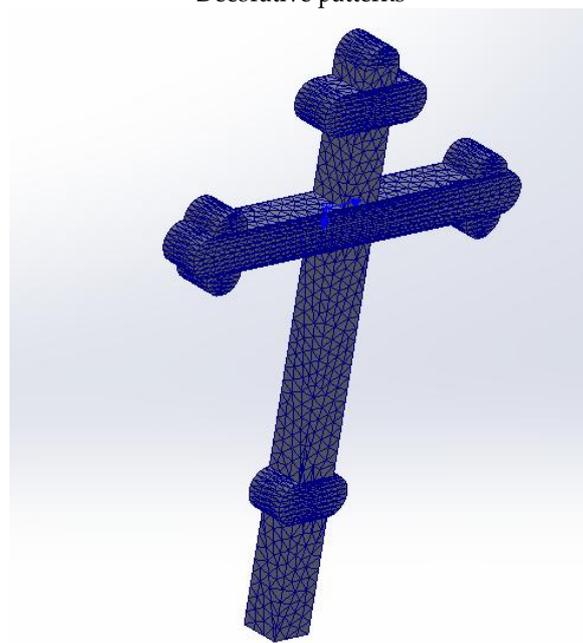
The heart of the décor

Figure 13. Crucifixion Tablet

Figure 13 is a carving in the tomb, which mainly tells the story of Christ's crucifixion, emphasizing Christ's forgiveness of the dead and the guidance of angels to the souls of nobles. Noble burial sites and near monasteries are also places to seek the protection of Christ, or to devote themselves to Christ. Burial ceremonies are often performed in churches and presided over by priests, a process that emphasizes the sanctity of religious ceremonies and entrusts the soul of the deceased to God's arms. The similarities between ritual and religious rituals in burial rituals are also noteworthy. Burial ceremonies often include religious elements such as prayer, singing, and communion, which are not only honoring the deceased, but also revering and relying on God. The solemnity and mystery of the burial rituals allow for solace and hope in the face of death, while also reflecting the sincere pursuit of religious belief in the Carolingian era.

Enrich the History of the Burial of European Nobility

As a witness of history, the tombs of the nobles of the Carolingian Empire in the ninth century are of great significance to the study of medieval European imperial culture. Noble tombs not only reflect the living standards of the nobles at that time, but also reveal the productivity, political and cultural outlook of the society at that time, and provide data for historical research. As a physical relic of history, the tombs of the nobility restore the social environment of the Carolingian Empire in the ninth century for future generations through their geographical distribution, architectural structure, funerary objects and carved decorations. The geographical distribution of the cemetery reflects the distribution of nobility in different regions, revealing the connections and influences between the regions. The architectural structure and decoration of the tomb present the architectural style and aesthetic taste of the time, showing the cultural taste of the aristocracy. Funerary objects and carvings record the lives and deeds of individual nobles, providing future generations with the opportunity to understand the aristocracy. Noble tombs also conveyed the values and religious beliefs of the society of the time through works of art such as epitaphs and carvings.Epitaphs often reflect Christian faith and hope for eternal life in the afterlife, reflecting the importance of religion in the life of the aristocracy. The religious motifs, Christian stories and family coats of arms in the carvings show the intertwined relationship between religion and family inheritance at that time. These works of art are not only witnesses of history, but also transmitters of history and culture, passing on the beliefs and values of that time to future generations. The influence of aristocratic tombs on historical memory is also reflected in its role in promoting social and cultural inheritance. As a memorial to the noble family, the tomb carries the glory and history of the family. The maintenance of the cemetery and the remembrance of the deceased by future generations help to maintain family continuity and cohesion. The historical stories, family traditions and religious beliefs in the tombs are passed down orally to future generations, influencing the values and cultural traditions of society.

CONCLUSION

To sum up, the tombs of the nobles of the Carolingian Empire in the ninth century, as witnesses of history and inheritors of culture, carry rich historical information and cultural values, and are of great significance for our understanding of the society, politics, religion and culture of the Carolingian Empire. Through the analysis of the geographical distribution, structure, funerary objects and artistic elements of these aristocratic tombs, we not only glimpse the life and status of the aristocracy, but also gain insight into the social background and cultural characteristics of the Carolingian Empire.

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