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# The Production and Planning Process of the Book of Kells

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THE PRODUCTION AND PLANNING PROCESS OF THE BOOK OF KELLS

A Thesis

Presented to

The Faculty of the Department of Art and Art History

San José State University

In Partial Fulfillment

of the Requirements for the Degree

Master of Arts

by

Roxanne V. Jones

August 2011



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The Designated Thesis Committee Approves the Thesis Titled

THE PRODUCTION AND PLANNING PROCESS OF THE BOOK OF KELLS

by

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## ABSTRACT

### THE PRODUCTION AND PLANNING PROCESS OF THE BOOK OF KELLS

by Roxanne V. Jones

In describing manuscripts such as the Book of Kells, it is often noted that they were copied from pre-existing documents, suggesting that the task of making such manuscripts was easy. While the scribes did use pre-existing manuscripts as an exemplar, the layout of the manuscript had to be carefully planned before ink or pigment could be placed on the page because the nature of the materials they used—the ink, pigments, and vellum—were often scarce and expensive. Scribes did not have the luxury of having an endless supply of materials at their disposal. Preparation of the material took time. Once the scribes had the appropriate materials, they had to ensure that they used them judiciously to avoid any mistakes so that nothing went to waste.

From the perspective of manuscript production, this thesis examines specific sections of the Book of Kells to demonstrate how manuscripts were made and the importance of planning the work before placing ink and pigment on the vellum. It shows that there was much more work involved than simply copying the text from one manuscript to another.

## ACKNOWLEDGMENTS

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## **1. A Look at Early Ireland**

The Book of Kells is one of Ireland's greatest treasures, although its origins—location and date—cannot be definitively determined. The gospel book earned its name from the monastery in which it was last housed before its move to Dublin (circa 1654) for safekeeping during the Cromwellian period when Catholic establishments were dissolved and property was either looted or destroyed. The monastery at Kells was founded in the mid-sixth century by Columcille (St. Columba) who played an important role in establishing several monasteries throughout Ireland and most notably the place of his exile, the island of Iona off the western coast of Scotland. Columcille and the monasteries associated with him became production centers for many of the elaborately decorated manuscripts such as the Book of Kells and the Lindisfarne Gospels, the likes of which had never been seen before. As Christianity grew in Ireland, the Irish needed to stock their churches and monasteries with ecclesiastical materials. Manuscripts such as bibles, psalters, and gospel books, from which the Irish made their own copies, made their way from Rome to Ireland. The Irish were not satisfied with simply copying the text from the exemplars, as they began to infuse the text with decoration and elaborate artwork.

A brief look at the history of Ireland will help us understand how and why the Irish became so adept at manuscript production. Appendix A contains a detailed timeline of historical events that are covered in this thesis.

## **Christianity in Early Ireland**

There are no written records documenting the precise moment that Christianity reached Ireland. Surviving written records of the early history of the Irish church come from the oral histories that were passed down through the years and then recorded by monks, one of many writing tasks that occupied the lives of monastic scribes.<sup>1</sup> The histories of other cultures also provide information about when and how the Irish were initially exposed to Christianity. The adoption of Christianity by the Irish was a slow process that occurred over a number of years.

## **Roman Influence in Britain and Ireland**

As the Roman Empire spread, so too did Christianity. By the early fifth century, Roman rule had reached far beyond the city of Rome. The Roman Empire rimmed the Mediterranean and spanned east to southeastern Europe and to the western edges of Asia, south to Egypt and northern Africa, west to Spain, and northwest to France, Germany, and Britain.<sup>2</sup> By the third century, the Romans fully occupied Britain as far north as the border with Scotland. With the Roman garrisons settling alongside them, many of the vanquished willingly adopted all things Roman including laws, customs, and religion. To become Roman also meant to become Christian; Britons became Romanized and Christian.<sup>3</sup>

Although the Romans never occupied Ireland, the Irish were not immune to contact with the Romans. Excavations and Roman writings provide evidence of trade

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<sup>1</sup> Thomas Cahill, *How the Irish Saved Civilization* (New York: Nan A. Talese, 1995), 159-60.

<sup>2</sup> Ibid., 125.

<sup>3</sup> Ibid., 124.

between the Romans and the Irish.<sup>4</sup> Additional exposure came from exiles who fled to Ireland during the Roman invasion of Britain. While the exiles from Roman rule may not have had good things to say about the Romans, this did not deter the Irish from adopting what they found intriguing about the Romans. The Irish “...yielded, not to Roman arms, but to Roman letters and religion.”<sup>5</sup> For a society that thrived on oral traditions, which included reciting ancestral lineages that often invoked more legend and folklore than truth, they found the intrigue of Roman letters was too much to resist. A steady stream of books began to flow from Rome to Ireland. As Thomas Cahill describes in *How the Irish Saved Civilization*, the story-telling Irish became enamored with the written word and books.<sup>6</sup>

This connection between the adoption of Christianity and the love of books was instrumental in the creation of the beautiful manuscripts that the Irish would later produce, including the Book of Kells.

### **Pre-Christian Irish Society**

The early Irish lived in a rural society without cities or towns. They were grouped by families or clans led by an individual with royal blood. Irish kings were believed to be descendents of ancestral gods of their tribes,<sup>7</sup> and they could recite their lineage from those gods. An Irish king was “...responsible not merely for his own conduct as a ruler

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<sup>4</sup> Maire de Paor and Liam de Paor, *Early Christian Ireland*, ed. Glyn Daniel, Ancient Peoples and Places (London: Thames and Hudson, 1958), 25.

<sup>5</sup> Ibid.

<sup>6</sup> Cahill, *How the Irish Saved Civilization*.

<sup>7</sup> de Paor and de Paor, *Early Christian Ireland*, 31.

but for the fertility of the land and protecting his tribe against blight and plague of every sort.”<sup>8</sup>

As described in *Early Christian Ireland*, the Irish economy was “pastoral and agricultural.”<sup>9</sup> The natural landscape supported this early economy. The island nation is rimmed by mountain ranges, which causes rainfall to drain towards its midlands, forming bogs and wetlands<sup>10</sup> and creating an abundance of grazing land for cattle, an important commodity in Ireland’s economy.

All aspects of cattle—tending, herding, milking, safe-guarding, and raiding—were a central part of Irish life.<sup>11</sup> The role of cattle in the life of the Irish is best described by Lucas who states, cattle “touched the lives of everyone from sunrise to sunset and from birth to death.”<sup>12</sup> For kings the rise to power was often a result of a successful raid on a rival’s herd.<sup>13</sup> An excerpt from the epic Irish poem, *Tain Bo Cuailnge, The Cattle Raid of Cooley* in Cahill (1995) shows how the Irish measured their wealth by the cattle they owned. In the following passage, Queen Medb and her husband, Ailil have been discussing who brought more worth to the marriage. Ailil, the younger son of a ruler from a nearby kingdom and therefore not an immediate heir to his father’s kingdom, has married Medb, the daughter of Eochaid Feidlech, the high king of Ireland.

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<sup>8</sup> Ibid.

<sup>9</sup> Ibid., 32.

<sup>10</sup> Ibid., 18.

<sup>11</sup> Cahill, *How the Irish Saved Civilization*; A. T. Lucas, *Cattle in Ancient Ireland* (Kilkenny, Ireland: Boethius Press, 1989).

<sup>12</sup> Lucas, *Cattle in Ancient Ireland*, 3.

<sup>13</sup> de Paor and de Paor, *Early Christian Ireland*, 77.

Ailil asserts that by marrying her, he has helped bolster her stature and fortune.

Perturbed, Medb counters by reciting her own accomplishments and reminding Ailil of the many items she bestowed on him upon their engagement. The argument escalates to the point that they began to count their assets to see whose wealth is greatest:

From pasture and paddock their teams and herds of horses were brought in. For the finest stallion in Medb's stud, worth one bondmaid by himself, Ailil had a stallion to match. Their vast herds of pigs were taken in from the woods and gullies and waste places. They were measured and matched and noted, and Medb had one fine boar, but Ailil had another. Then their droves and free-wandering herds of cattle were brought in from the woods and wastes of the province. These were matched and measured and noted also, and found to be the same in number and size. But there was one great bull in Ailil's herd, that had been a calf of one of Medb's cows—Finnbennach was his name, the White Horned—and Finnbennach, refusing to be led by a woman, had gone over to the king's herd. Medb couldn't find in her herd the equal of this bull, and her spirits dropped as though she hadn't a single penny.<sup>14</sup>

The tale continues with Medb plotting to seize ownership of Finnbennach, and when that fails, a battle ensues that ultimately leads to the untimely death of Medb, all of which is the result of a feud over a single bull.

According to da Paor and da Paor, "There was no currency, and the basic units of value and exchange were the cow and the *cumal* (literally 'bondswoman'), which [sic] was worth four cows. Wealth was reckoned not so much in acres of land as in heads of cattle."<sup>15</sup> The importance of cattle to the Irish can be seen in "their laws, stories and

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<sup>14</sup> This text from the *Tain Bo Cuailgne* used by Thomas Cahill (1995) was translated by the Irish poet, Thomas Kinsella. Cahill, *How the Irish Saved Civilization*, 73-74.

<sup>15</sup> de Paor and de Paor, *Early Christian Ireland*, 77.

annals.”<sup>16</sup> As we will see later, cattle were also central to the wealth of the Irish monasteries and to the creation of religious manuscripts.

The agricultural aspect of life also played a factor in the Irish leanings toward paganism. The early Irish would hold pagan festivals to mark the beginning and ending of the growing season. Some of the rituals held during the fall festival would later form the basis of the practices that are part of our present-day Halloween celebrations.<sup>17</sup> As the Irish adopted Christianity, they were slow to drop their pagan rituals. They often had a propensity for mixing old and new customs together.<sup>18</sup> The Irish did not simply abandon their pagan ways; they adopted Christianity and did not seem to find any conflict in mixing the two practices together. Bieler notes that the Irish church was tolerant of the pre-Christian native culture and that the later Irish monasteries found room for both native and classical lore.<sup>19</sup> Rome, however, often disapproved of the practices that took place on the island nation and sent several missions to Ireland in an attempt to reform and correct the Irish ways. The split between the Irish and Roman ways of practicing Christianity culminated with the Synod at Whitby in 664 CE where the Roman way ultimately prevailed.

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<sup>16</sup> Ibid.

<sup>17</sup> Cahill, *How the Irish Saved Civilization*, 149.

<sup>18</sup> de Paor and de Paor, *Early Christian Ireland*, 74.

<sup>19</sup> Ludwig Bieler, *Ireland. Harbinger of the Middle Ages* (London: Oxford University Press, 1963), 1.

## St. Patrick

“Prosper of Aquitaine records in his *Chronicle* that Pope Celestine in the year 431 sent Palladius to minister to ‘those of the Irish who believed in Christ.’”<sup>20</sup> Palladius was not successful, and it was a Romanized Briton by the name of Patricius who would be instrumental in converting legions of pagan Irish to Christianity.

In the story of St. Patrick it is hard to discern fact from fiction, due in part to the Irish custom of embellishing stories and the failure of St. Patrick himself to provide any dates when he chronicled the events of his life in his *Confession*. St. Patrick, long synonymous with Ireland, was not Irish. He was born in Britain during the time of the Roman occupation, the son of a provincial Roman official. At the age of sixteen, St. Patrick was captured and taken into slavery by the Irish. He was bound to a king by the name of Miliucc in the hills of Antrim in northern Ireland.<sup>21</sup> St. Patrick endured six years of isolated shepherding during which time he turned to his heretofore ignored faith and prayed constantly as a form of solace. As he recalled in his *Confession*, it was one night in a dream that he heard a voice telling him to return home. St. Patrick left his post and walked nearly 200 hundred miles without ever being discovered or confronted to an inlet where he found a ship headed to the continent. He was able to convince the crew to let him board and within three days he was on the continent “and as they left their ship and journeyed inland they found only devastation—*desertum*,...through which they

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<sup>20</sup> de Paor and de Paor, *Early Christian Ireland*, 28.

<sup>21</sup> Cahill, *How the Irish Saved Civilization*, 101.

trudged for two weeks.”<sup>22</sup> St. Patrick’s escape from Ireland occurred around the time when the Romans were fending off Germanic attacks to their empire which would explain St. Patrick’s description of the area as being a desert.<sup>23</sup> After a few years on the continent, St. Patrick finally returned to his family in Britain. He had difficulty re-adjusting to life in Britain as a free man, and another series of dreams and visions prompted him to return to Ireland by way of Gaul where he completed his theological education on the island monastery of Lerins, just offshore from present-day Cannes.<sup>24</sup> With enslavement disrupting his formal education, St. Patrick’s Latin was fundamental and his Irish was self-taught. Having been ordained as a priest and a bishop, St. Patrick returned to Ireland around 432 CE.<sup>25</sup>

Upon his return to Ireland, St. Patrick established churches headed by bishops and priests throughout northern, central, and eastern Ireland. Because of the pastoral nature of Ireland and the lack of population centers, these churches were located on land donated by kings who granted St. Patrick permission to minister.<sup>26</sup>

At the time of his death in 461 CE, St. Patrick had transformed Ireland from a pagan to a Christian society. Violence including warfare, slavery, and human sacrifices decreased or ended.<sup>27</sup> St. Patrick understood that Christianity could not survive without Roman literacy. The first Irish Christians also became the first Irish literates as

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<sup>22</sup> Ibid., 104.

<sup>23</sup> Ibid.

<sup>24</sup> Ibid., 106.

<sup>25</sup> Ibid; de Paor and de Paor, *Early Christian Ireland*.

<sup>26</sup> Cahill, *How the Irish Saved Civilization*; de Paor and de Paor, *Early Christian Ireland*, 33.

<sup>27</sup> Cahill, *How the Irish Saved Civilization*, 110.



St. Patrick and his successors taught the Irish to read using martyrologies from the continent.<sup>28</sup>

## **Post-Patrician Ireland**

As described in *Early Christian Ireland*, following St. Patrick's death the Irish church began to change and was replaced by monastic establishments. Irish monasticism differed from the earlier Egyptian prototype in two ways: "(1) Irish monks valued letters and learning, and (2) it [Irish monasticism] was a missionary movement."<sup>29</sup> The Egyptian prototype was characterized by the monks adopting a hermetic lifestyle where they lived in solitude in the desert. An Irish monk's life was devoted to prayer, penance, learning, and working to maintain the monastery.

Monastic centers became the nuclei of the first cities or towns in Ireland. Buildings were required to house monks and students, books were needed for study, vessels for the altar, boats or other conveyances for transport, and food for sustenance—all of which were provided by the community. Monastic workshops became the chief centers of craftsmanship. By the beginning of the seventh century, monasteries became major centers of learning. Cahill also notes that monastic centers grew rapidly into the first population centers—hubs of unprecedented prosperity, art, and learning.<sup>30</sup>

## **St. Columba**

While St. Patrick is credited with bringing Christianity to Ireland, his role often overshadows the significant contributions St. Columba made to the spread of Christianity

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<sup>28</sup> Ibid., 150-51.

<sup>29</sup> de Paor and de Paor, *Early Christian Ireland*, 50-52.

<sup>30</sup> Cahill, *How the Irish Saved Civilization*, 155.

throughout Ireland and beyond. Born as a prince of the Clan Conaill, in Gartan, on December 7, 521, with the given name Crimthann, Columcille gave up his royalty and became a monk. His monastic name became Columcille, meaning Dove of the Church, which was later Romanized to Columba.<sup>31, 32</sup> Columcille's monastic training included a trip to Gaul where he visited the tomb of St. Martin at Tours. He founded several monasteries in Ireland, including Kells in the 550s and Durrow in 553. By the age of forty-one, Columcille is credited with having established forty-one monasteries.<sup>33</sup>

The number of monasteries linked to Columcille—ones he established himself or those established by his disciples—show the dedication to the missionary movement which was one of the characteristics of Irish monasticism. The centers he established also earned the reputation of being revered learning centers, another characteristic of Irish monasticism. Many of the surviving manuscripts from the seventh and eighth century have been ascribed to Columcille, partly because of his association with the monasteries that the manuscripts were last linked to.

Columcille's love of books is at the core of several legends surrounding him, and a surviving manuscript known as the Cathach of Columcille (Dublin, Royal Irish Academy, s.n.). According to one story, Columcille secretly copied under the darkness of night a psalter of his mentor, Bishop Finian of Clonard. There are some who say that Columcille's own fingers provided the light needed for seeing at night. Upon discovering the clandestine copying, Bishop Finian took Columcille before King Diarmait. King

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<sup>31</sup> Ibid., 169.

<sup>32</sup> Other spellings for Columcille include Colum Cille and Colm Cille.

<sup>33</sup> Cahill, *How the Irish Saved Civilization*, 169.

Diarmait ordered Columcille to return both the original and copy to Bishop Finian with the famous decree “To every cow her calf; to every book its copy.”<sup>34</sup> Columcille refused to return the copy and a battle erupted between Columcille’s followers and King Diarmait’s men which resulted in many deaths—3,000 on King Diarmait’s side and one on Columcille’s side. Columcille had carried the disputed copy into battle thus the reason for the psalter’s earning the name the Cathach (meaning battler) of Columcille.<sup>35</sup> As punishment for the raising of arms and subsequent deaths, major transgressions for a monk, Columcille was excommunicated for a short time and, as penance, was permanently exiled from Ireland. To be exiled from one’s home county was one of the most severe punishments that could be imposed on a monk.

The year of Columcille’s exile occurred sometime in 563 or 564 when he along with twelve companions set sail from Ireland and landed on Iona, an island off the coast of western Scotland.<sup>36</sup> While Columcille may have been forced to leave the country of his birth, he did not give up the church nor contact with Ireland.<sup>37</sup> Columcille’s establishment at Iona became another major center whose influence reached beyond the shores of Scotland. From Iona Columban missionaries established several centers in Britain and even went as far as the continent.

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<sup>34</sup> Ibid., 170.

<sup>35</sup> Michelle P. Brown, “The Genesis of the Lindisfarne Gospels,” in *The Lindisfarne Gospels. Society, Spirituality and the Scribe* (Toronto: University of Toronto Press, 2003).

<sup>36</sup> Ibid; George Henderson, *From Durrow to Kells: The Insular Gospel-Books, 650-800* (New York: Thames and Hudson, 1987).

<sup>37</sup> Bieler, *Ireland. Harbinger of the Middle Ages*, 67.

The monastery at Iona thrived until the monks were forced to abandon it upon Viking raids in the early ninth century. The monks fled Iona with their possessions and settled at another of Columcille's establishments, the monastery at Kells. Charter text written in the twelfth century on blank pages in the Book of the Kells provides the earliest definitive documentation of the book's presence at Kells. The book was kept at Kells until it was sent to Trinity College Dublin for safe keeping during the dissolution of the monasteries.

The Book of Kells has been housed at Trinity College Dublin since 1661 and from there it has become a national treasure and a source of great research opportunities. This thesis will use the Book of Kells to examine the importance of the preparation and planning that was needed to create a manuscript.

## 2. A Description of the Materials Used to Make the Book of Kells

Benefiting from technological advances, scholars have been able to determine more precisely the materials that were used to make the Book of Kells. In 1991 and 1992, Fuchs and Oltrogge examined the Book of Kells microscopically and with a color spectrometer.<sup>38</sup> Using the color spectrometer on various portions of the Book of Kells, and comparing the findings with results from known colors, Fuchs and Oltrogge could confidently identify several of the colors used in the Book of Kells. In cases where there was a close match with the color spectrometer curves, they theorized that the color had been mixed with another ingredient, such as chalk or another substance, to form the color.<sup>39</sup> In this chapter, I will take a brief look at the materials that were used for the text and illustrations and then focus on the vellum which will play a major role later in this document.

### Writing Materials

The majority of the text was written with a black ink produced from oak galls which were in abundance in the British Isles. Terms for this ink are various, such as iron gall ink, oak gall ink, black gall ink, gall ink. The tannin from the oak galls is a

result of the gall wasp depositing its egg either on the soft bark of an oak twig or on a young bud. The reaction of the tree is to form a hard sphere, about 10 – 15 mm (0.5 inch) in diameter. The adult wasp emerges from the gall, and its exit

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<sup>38</sup> Robert Fuchs and Doris Oltrogge, "Colour Material and Painting Technique in the Book of Kells," in *The Book of Kells. Proceedings of a Conference at Trinity College Dublin. 6-9 September 1992*, ed. Felicity O'Mahony (Dublin: Scholar Press, 1994).

<sup>39</sup> See for example their discussion about the green *vergaut* (p. 136) and the purple/pink colors (p. 137).

is indicated by a small hole. The best galls, though, are those which still contain the wasp as these have a higher tannin content.<sup>40</sup>

Recipes found in Francis Clement's *The Petie Schole* (1587) and in Edward Cocker's *The Pen's Transcendency* (1672) indicate that, although slightly different in process and ingredients, it took several days to create the ink from oak galls.<sup>41</sup>

Other colors used for the text include red and purple which are concentrated mostly in the front, preliminary portion of the book. See, for example, folios 11v, 18r, 20r, and 20v where red ink is used and folios 22r and 22v where black, red, and purple pigments are all used on the same page.<sup>42</sup> Other colors used for decoration in the text or illustrations include yellow, red, green, purple, blue, brown, black, and white.<sup>43</sup> These pigments were created from minerals or plant dyes which took time to produce. Minerals were either indigenous or obtained through trade from other regions. To create a pigment from a mineral would first require the grinding of the mineral until it became an almost powder-like substance. Once ground, the mineral could be stored without worry of spoilage. The final steps in preparing the pigments would require the addition of a liquid such as water. The addition of a binding agent such as an egg would ensure that the

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<sup>40</sup> Michelle P. Brown and Patricia Lovett, *The Historical Source Book for Scribes* (Toronto: University of Toronto Press, 1999), 12.

<sup>41</sup> Ibid.

<sup>42</sup> My primary focus is on the text in the Book of Kells, not the illuminated pages. For this reason, pages such as the canon tables and other elaborately decorated pages are not discussed. Fuchs and Oltrogge state that "red lead, orpiment, red ochre and a pink-mauve-coloured mixture made from a purple-coloured dye and chalk" (p. 134) are used for the text. On some folios such as 13r, 15v, and 16v, it is difficult to determine from looking at the reproductions the precise color of the text. I could not locate any examples of orpiment used for the text unless Fuchs and Oltrogge were considering when it was used as decoration for the lettering.

<sup>43</sup> For a complete list as identified by Fuchs and Oltrogge, see *The Book of Kells, Proceedings of a conference at Trinity College Dublin 6-9 September 1992*, pp. 134–135.

pigment would stick to the vellum. Once the pigment was mixed with the binder, it needed to be used up quickly as it rarely had a long shelf life, especially once the binding agent was added.

## The Pages

### The size of the pages

Scholars have estimated that the pages of the Book of Kells originally measured approximately 260 millimeters by 370 millimeters (11 inches by 15 inches). For various reasons, the pages currently measure approximately 255 millimeters by 330 millimeters (9.5 inches by 13 inches).<sup>44</sup> Some of the trimming is a result of rebinding work that took place at various times after the book arrived at Trinity College Dublin around 1661. When Roger Powell rebound the book in the mid-1950s, he surmised that the book had a minimum of five previous bindings, the first being the original binding. In the Annals of Ulster, the theft in 1006 CE of the “great gospel of Columcille” is described.<sup>45</sup> The book, without its cover was found two months later buried in a bog. Many believe the book described in Annals of Ulster is the Book of Kells. The removal of the cover resulted in the loss of front and back portions of the manuscript. The second binding of the Book of

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<sup>44</sup> Roger Stalley, "Kells, Book Of," Grove Art Online. <http://www.groveart.com.libaccess.sjlibrary.org/shared/views/article.html?section=art.046203> (accessed January 2, 2008); Henderson, *From Durrow to Kells: The Insular Gospel-Books, 650-800*; Bernard Meehan, "Dimensions and Original Number of Leaves," in *The Book of Kells. MS 58. Trinity College Library Dublin. Commentary*, ed. Peter Fox (Lucerne: Faksimile Verlag Luzern, 1990), 175; Peter Brown, *The Book of Kells: Forty-Eight Pages and Details in Color from the Manuscript in Trinity College, Dublin* (London: Thames and Hudson, 1980); G. O. Simms, *The Book of Kells; a Selection of Pages, Reproduced with a Description and Notes by G.O. Simms* (Dublin: Printed at the Dolmen Press for the Library of Trinity College, 1961).

<sup>45</sup> Françoise Henry, *The Book of Kells: Reproductions from the Manuscript in Trinity College, Dublin with a Study of the Manuscript by Françoise Henry* (New York: Knopf, 1974), 150. See also, W. M. Hennessy and B. MacCarthy, eds., *Annals of Ulster*, 4 vols. (Dublin: 1887-1902).

Kells would have been to repair the book after its theft and recovery. Records at Trinity College Library Dublin document three rebindings before Powell's 1950s work: rebinding in 1742 by John Exshaw who rebound the book onto seven cords<sup>46</sup> after the discovery of bifolium 336/335, rebinding in 1821 by George Muller, and rebinding in 1895 by Galwey of Eustace Street in Dublin.

The binder responsible for the rebinding in 1821 appears to have done considerable damage to the Book of Kells, including destroying some of the illustrations, as mentioned by at least two different people in notes that are retained in the manuscript room at Trinity College Library Dublin. The earliest of these notes were made by Dr. James H. Todd (1805-1869) who examined the Book of Kells and wrote that it...

[r]emained in the manuscript chamber of Trinity College in a loose and insecure cover until the year 1821 when it was unfortunately given to be bound: I say unfortunately because the event must be regarded as the last injury it has sustained—the Binder ignorantly cut almost half an inch off the margin, thereby injuring several of the illuminations and cutting off some modern entries, which are connected with the history of the book....<sup>47</sup>

Roger Powell also mentioned the damage from the 1821 rebinding in the report he prepared when he rebound the book in the mid-1950s. He noted that during the 1821 binding, the edges of the pages were "heavily cut" and that even some of the illumination had been cut off.<sup>48</sup> While most trimming by a binder would occur on the spine edge of a page where the book is bound, some trimming has occurred elsewhere which has

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<sup>46</sup> Bernard Meehan, "Bindings: Documentary Evidence," in *The Book of Kells. MS 58. Trinity College Library Dublin. Commentary*, ed. Peter Fox (Lucerne: Faksimile Verlag Luzern, 1990), 193.

<sup>47</sup> J. H. Todd, "*Description of TCD Manuscripts*" n.d., MS 1826a, Trinity College Manuscript Room, Dublin.

<sup>48</sup> Roger Powell, "*Report on the Repair and Rebinding of the Book of Kells*" 1952, MS 2586, Trinity College Library, Dublin.



damaged some illustrations. One example of where an original illustration has been damaged can be seen on folio 12r where the top of the man's head has been cut off due to trimming at the top of the page. Other examples of injurious trimming can be seen on folios 29r and 188r where the tops of the illuminations have been lost due to trimming at the tops of the pages. Text that was added in the margins long after the completion of the book was damaged when fore-edges were trimmed. For example, "Math. VI" is written in the left margin of folio 44v, but half of the "M" is cut off. On folio 81v, the "M" and "X" are completely missing from "Math. XVIII" which is written on two lines in the left margin of the page. This text that was added in the margins identifies the chapter numbers of the Gospels according to the divisions established in the thirteenth century by Stephen Langton.<sup>49</sup> The person responsible for adding the chapter references to the margins is a Gerald Plunket<sup>50</sup> of Dublin who documented his actions in 1568 by writing the following at the bottom of folio 334v: "I Gerald Plunket ... wrot the content of every chapter..."

### **The number of pages**

There are currently 340 surviving leaves (680 pages) of the Book of Kells.<sup>51</sup> The front and back portions of the book are missing, which some believe happened when the

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<sup>49</sup> Henry, *The Book of Kells: Reproductions from the Manuscript in Trinity College, Dublin with a Study of the Manuscript* by Françoise Henry, p. 150.

<sup>50</sup> Some scholars use Plunkett although Gerald Plunket used one "K" when he wrote his name on folio 334v.

<sup>51</sup> For purposes of this thesis, the terms leaf or folio will be used to describe a single sheet of vellum (or half of a bifolium). A folio or leaf will have two pages—the recto (the front page) and a verso (the back page).

cover was removed or stolen from the book.<sup>52</sup> Several scholars have estimated that the Book of Kells originally numbered 370 leaves. In the *Commentary* that accompanies the 1990 facsimile produced by Faksimile Verlag Luzern, Bernard Meehan describes how he calculated the number of missing leaves.<sup>53</sup> He estimates that ten leaves are missing from the prefatory part of the book. It is clear that the final chapters of John are missing (John 17:13 through 21:25), which Meehan estimates contains 2,660 words. Using folios 336r through 339v as an example, Meehan calculated that a page contains an average of 112 words. By dividing the numbers of words to a page into the number of words that are missing, Meehan concludes that there are approximately twenty-four pages or twelve leaves missing. He also estimates that an additional six leaves are missing because of textual gaps following folios 26, 177, 239, and 330. Also missing are Evangelist portraits for Mark (whose text begins around folio 130) and Luke (whose text begins around folio 188). According to Meehan's calculations, this brings the total number of missing leaves to thirty.

### **The vellum**

Most scholars agree that the Book of Kells is made of calf vellum. Anthony Cains disputes some scholars who believe that some of the pages of the Book of Kells are made of goatskin or sheepskin.<sup>54</sup> He notes that careful attention must be paid to maintaining consistent magnification when examining skins under the microscope,

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<sup>52</sup> Henry, *The Book of Kells: Reproductions from the Manuscript in Trinity College, Dublin with a Study of the Manuscript by Françoise Henry*.

<sup>53</sup> Meehan, "Dimensions and Original Number of Leaves," 175-76.

<sup>54</sup> Anthony Cains, "The Surface Examination of Skin: A Binder's Note on the Identification of Animal Species Used in the Making of Parchment," in *The Book of Kells. Proceedings of a Conference at Trinity College Dublin. 6-9 September 1992*, ed. Felicity O'Mahony (Dublin: Scholar Press, 1994), 174.

otherwise misidentification will occur. Examination of the axilla or armpit or the belly of an animal also helps in identifying features and characteristics of animal skins.

Several scholars have attempted to calculate the number of calves that would have been needed to make the Book of Kells. Françoise Henry estimated that 150 calves were needed to make 370 leaves,<sup>55</sup> and Roger Powell, through information from the vellum maker, H. Band and Company of Brentford, estimated ninety calves were needed.<sup>56</sup> In the *Commentary* that accompanies the 1990 facsimile of the Book of Kells, Meehan and Cains detail how they arrive at their estimate of 185 calves needed to make the book. They note that Powell's estimate is incorrect because he received misinformation from H. Band.<sup>57</sup>

Meehan and Cains made their calculations using the following suppositions:

1. single thin skin from a young or uterine calf would yield one bifolium, normally cut in such a way that the spine runs horizontally (or sometimes diagonally) across the middle of an opening ... (see Fig. 1, left).
2. thicker, heavier, more robust skin of around six square feet from calves perhaps two or three months old, would yield two bifolia, cut so the spine runs vertically down the spine of the book, and occasionally perhaps yielding a single leaf.<sup>58</sup> (see Fig. 1, right)

Once folded, a bifolium becomes four pages of text. As will be shown later in this thesis, the text on the bifolium does not always flow sequentially. Gatherings of bifolia are called quires. Quires typically contained four to five bifolia. In its current

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<sup>55</sup> Henry, *The Book of Kells: Reproductions from the Manuscript in Trinity College, Dublin with a Study of the Manuscript* by Françoise Henry, 152.

<sup>56</sup> Bernard Meehan and Anthony Cains, "Direction of the Spine of the Calf," in *The Book of Kells. MS 58. Trinity College Library Dublin. Commentary*, ed. Peter Fox (Lucerne: Faksimile Verlag Luzern, 1990), 183.

<sup>57</sup> *Ibid.*, 183-84.

<sup>58</sup> *Ibid.*, 183.

state, the Book of Kells contains thirty-eight quires, which are a result of the last rebinding by Roger Powell.

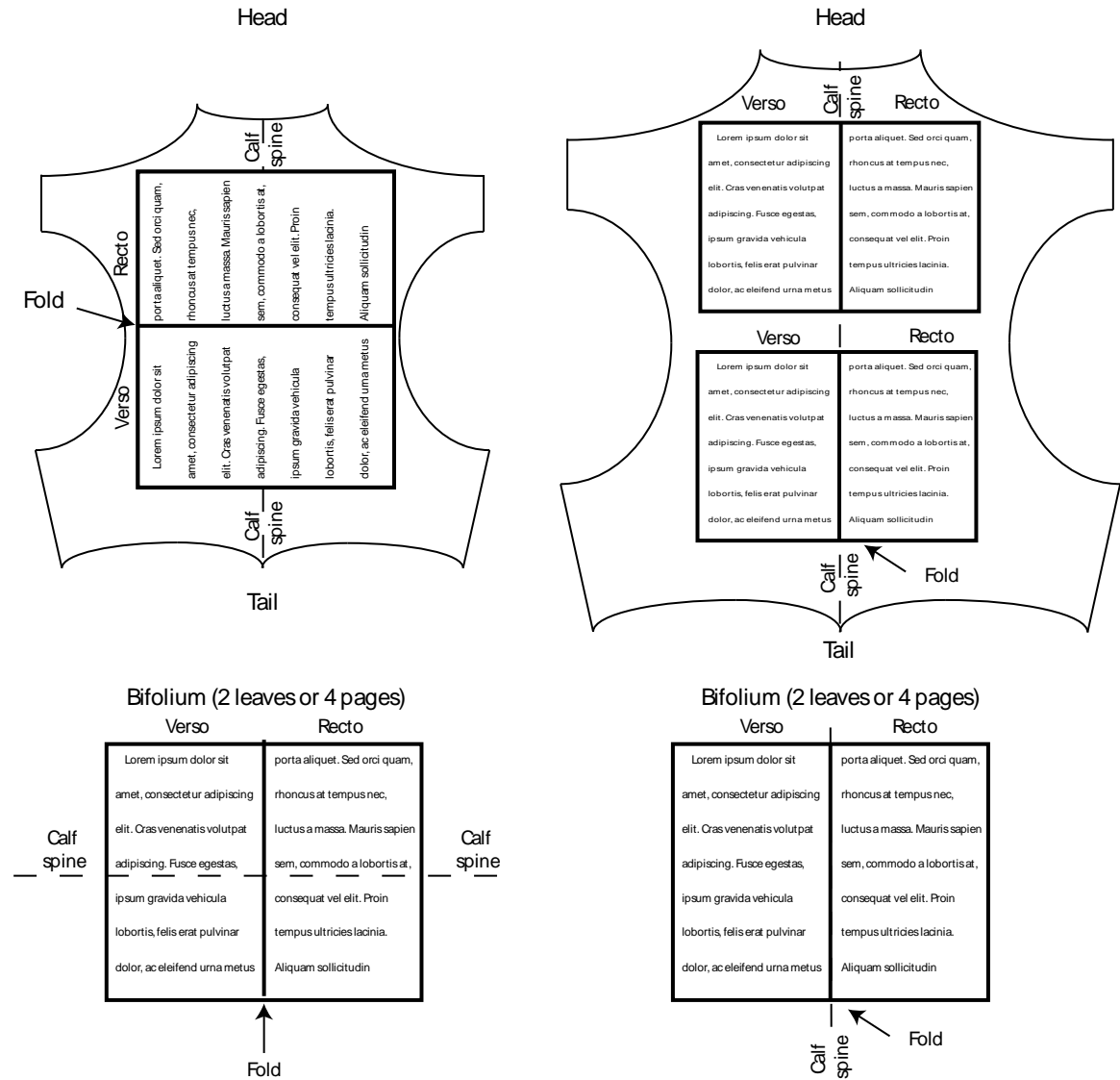


Figure 1. Diagram of calf skins and cut outs of vellum. *Left*, Diagram of calf skin and resulting sheet of vellum from a younger calf; *right*, diagram of calf skin and resulting sheet of vellum from an older calf. Not drawn to scale.

Using these suppositions, Meehan and Cains surmised that a bifolium with a calf spine that runs horizontally or diagonally through a page would come from one calf skin and that a bifolium where the calf spine runs vertically through the page comes from half a calf skin. Ideally, it was better to have the calf spine run horizontally through the page to help eliminate the cockling affect where the page wants to fold back into its original position.

Meehan and Cains used the direction of the calf spine, the number of bifolia or conjectural bifolia, and the number of single and missing leaves to calculate that a total of 185 calves would have been needed to make the Book of Kells (see Table 1).

Table 1. Number of calves needed to produce the Book of Kells as calculated by Bernard Meehan and Anthony Cains.

Page type	Number of Leaves	Number of Calves	Percentage of Existing Leaves
Bifolia or conjectural bifolia with:			
Horizontal spine	130 <sup>a</sup>	130.0	76.47
Vertical spine	13 <sup>a</sup>	6.5	7.64
Single leaves with:	54	22.5	15.88
Horizontal spine	28		
Vertical spine	26		
Estimated missing pages with:	30	26.0	
Horizontal spine	23		(76% of 30)
Vertical spine	2		(8% of 30)
Single leaves	5		(16% of 30)
<b>Total</b>	<b>370</b>	<b>185.0</b>	

*Source:* Adapted from “Direction of the Spine of the Calf,” in *The Book of Kells. MS 58. Trinity College Library Dublin. Commentary*, ed. Peter Fox (Lucerne: Faksimile Verlag Luzern, 1990), 184.

<sup>a</sup>When calculating the total number of leaves, this number is multiplied by two.

In *Parchment as Faunal Record*, Ryan examines the ages and gender of the animals used for manuscripts.<sup>59</sup> Ryan notes that in the Irish culture, female cows were saved from slaughter and kept as milk-producers. A small proportion of male calves were saved for husbandry and breeding. The majority of the herd that was used to produce vellum were male calves that were killed at a young age, usually not more than three months old. Prenatal and aborted calves were also used because the skin was thinner and contained fewer hair follicles. It was easier to remove the hair from younger calves which had thinner skin. Finer quality vellum came from the younger or prenatal calves because they had fewer and smaller hair follicles.

Using calculations presented by Ryan who estimated the number of animals needed to make up the Irish manuscript, *Leabhar Breac* ("The Speckled Book," Royal Irish Academy MS. 23 P 16, circa 1400),<sup>60</sup> Meehan and Cains estimated that the 185 calves needed to make the Book of Kells would have come from herds that totaled 1,276 animals (see Table 2).<sup>61</sup>

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<sup>59</sup> Today, parchment is the term used for goat skin. Ryan uses the term parchment in its original form which meant skins from any animal.

<sup>60</sup> K. Ryan, "Parchment as Faunal Record," *MASCA Journal* 4, no. 3 (1987): 135.

<sup>61</sup> Meehan and Cains, "Direction of the Spine of the Calf," 184.

Table 2. Calculating the number of animals in a herd using Ryan's formula.

	Leabhar Breac	Book of Kells
Number of leaves	140	370
Number of calf skins	70	185
Percentage of skins that come from live male calves	86%	86%
Number of male calves used (50% of males that were born)	60	159
Total number of live births if male calves make up 50% of live births (assuming equal number of males and females)	240	634
Percentage of breeding females	70%	70%
Number of breeding females in a herd	343	906
Percentage of cows in a herd <sup>a</sup>	71%	71%
<b>Total number of animals in a herd or herds</b>	<b>483</b>	<b>1,276</b>

Source: K. Ryan, *Parchment as Faunal Record* (1987), 135.

<sup>a</sup>Ryan uses this percentage based on the seventh/eighth century law tract *Crith Gablach* that species the minimum cattle stock of a *boaire* (a freeman or self-sufficient farmer) should consist of twenty cows, two bulls, and six oxen.

The Leabhar Breac was created for a wealthy Irish family who could have afforded the cost of the manuscript. As Ryan notes, “the cost of the raw material for just one manuscript was very high.”<sup>62</sup> If, as believed, the Leabhar Breac was completed within one calendar year, having access to a herd of 483 cattle to produce just one manuscript would have required an incredible amount of wealth. Unlike the Leabhar Breac, the Book of Kells is much larger and contains much more decoration and

<sup>62</sup> Ryan, "Parchment as Faunal Record," 135.

illustration. Given the number of cattle needed to create the Book of Kells, which would have been one of many manuscripts in production at a monastery, it is not surprising that it took many years to complete the Book of Kells. Some scholars have estimated that it could have taken at least ten years to complete the Book of Kells. Cows were an expensive commodity and monasteries would have had to be wealthy in order to obtain the material needed to produce manuscripts. Access to the number of cattle as well as the land to hold the cattle figured in the wealth of the monastery. It is feasible that the cattle used to produce the vellum came from several monasteries under the same order. Given the precious nature of the materials needed to produce a manuscript, careful planning would have been needed so that nothing would be wasted or lost due to errors.



### 3. Contents of the Book of Kells

The Book of Kells contains the gospel text of Matthew, Mark, Luke, and John.

The text comes from the Latin translation of the Bible known as the Vulgate (*editio Vulgata*). The Vulgate was commissioned around 382 CE by Pope Damasus who tasked Jerome with reworking the Latin translation from the original Hebrew and Greek versions of the Bible.<sup>63</sup> The Vulgate became the Church's accepted standard and replaced the Old Latin version (*vetusta translatio*) throughout most of Europe by the end of the sixth century.<sup>64</sup>

Surviving copies of books such as the Book of Durrow (TCD, MS A.4.5 (57)) and the Lindisfarne Gospels (BL, Cotton MS Nero D.iv), both made around the seventh or eighth century, allows us to see the components that made up gospel books at that time. By comparing the Book of Kells with other early gospel books, we can theorize about the plans the monks had for the layout of the Book of Kells. The comparison also provides an opportunity to see what is missing in the Book of Kells.

#### Introductory Material

The introductory or prefatory material, also known as the preliminaries, varied between gospel books. Typically, the Vulgate began with the *Novum opus*, the letter

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<sup>63</sup> Janet Backhouse, *The Lindisfarne Gospels* (Ithaca, NY: Cornell University Press, 1981); Michelle P. Brown, *The Lindisfarne Gospels. Society, Spirituality and the Scribe* (Toronto: University of Toronto Press, 2003); Brown, *The Book of Kells: Forty-Eight Pages and Details in Color from the Manuscript in Trinity College, Dublin*.

<sup>64</sup> Henderson, *From Durrow to Kells: The Insular Gospel-Books, 650-800*; Brown, *The Book of Kells: Forty-Eight Pages and Details in Color from the Manuscript in Trinity College, Dublin*.

from Jerome to Pope Damasus explaining the aim of his translation.<sup>65</sup> The Eusebian canon tables were usually prefaced by an explanatory letter from their creator, Eusebius of Caesarea.<sup>66</sup> Other prefatory matter often found in gospel books included a glossary of Hebrew names; the *Breves causae*, summaries of each of the gospels; and the *Argumenta*, a biography of each of the four authors or, as Henderson describes them, “a short mystical treatise characterizing the author-Evangelist himself.”<sup>67</sup> Modern-day bibles contain similar introductory material at the beginning of every book.

As previously stated, the Book of Kells is missing some of its preliminary pages (Meehan estimated ten missing leaves)<sup>68</sup> including the *Novum opus*. In its current state, the first page of the Book of Kells (f. 1r) contains a column of Hebrew names on the left side of the page—the ending of the glossary of Hebrew names. The second column on the page contains an illustration of the four Evangelist symbols in landscape mode, turned perpendicular to the text as if it were an afterthought, something added to fill the blank space. The first Eusebian canon table begins on the verso (f. 1v) thus not allowing for the Eusebian letter although it could have appeared in the pages preceding the Hebrew names. The subsequent nine pages (ff. 2–6) contain canon tables. Folios 6v and 7r were

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<sup>65</sup> Henry, *The Book of Kells: Reproductions from the Manuscript in Trinity College, Dublin with a Study of the Manuscript* by Françoise Henry.

<sup>66</sup> Backhouse, *The Lindisfarne Gospels*.

<sup>67</sup> Henderson, *From Durrow to Kells: The Insular Gospel-Books, 650-800*.

<sup>68</sup> Meehan, "Dimensions and Original Number of Leaves."

left blank by the original scribes as they now contains charter text written in the twelfth century in the Irish language concerning property granted to the Abbey of Kells.<sup>69, 70</sup>

Folio 7v contains an illustration of the Madonna and Child surrounded by four angels in each corner of the page. Intersecting the border, on the lower right side of the page, is a small rectangle with six male figures in profile looking to the right, almost as if they were directing the viewer to look at the following page, folio 8r which is an elaborately decorated page that marks the beginning of the *Breve causae* (summary) of Matthew.

Folio 7 is a single sheet and its placement here hints at how the scribes orchestrated the production of manuscripts. This single folio (f. 7) is situated inside a gathering of four bifolia (as a result of the last rebinding in the 1950s, this gathering is now labeled as quire 2). Closer examination of the vellum used for folio 7 shows that the direction of the calf's spine runs vertically from top to bottom, which is in opposition to the other sheets in this gathering where the calf spine runs horizontally across the pages. This appears to correspond with an earlier discussion about the direction of the calf spine where Meehan and Cains showed a correlation between vertical calf spines and single leaves.<sup>71</sup> The fact that only one side of the folio contains any text or illustration provides some clues to the process of creating manuscripts at this time. It seems possible that part of manuscript production involved tasking some scribes or illustrators with producing

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<sup>69</sup> Simms, *The Book of Kells; a Selection of Pages, Reproduced with a Description and Notes* by G.O. Simms; Henry, *The Book of Kells: Reproductions from the Manuscript in Trinity College, Dublin with a Study of the Manuscript* by Françoise Henry.

<sup>70</sup> Other scholars have dated these charters to the 12th century.

<sup>71</sup> Meehan and Cains, "Direction of the Spine of the Calf."

illustrations on single leaves to ensure that not a single piece of vellum went to waste. These single leaves were then inserted as necessary to serve as a divider page between different sections of the text. In this case, folio 7 works as a separator between the canon tables and the *Breve causae*. (See appendix B for an example of the make up of quire 2.)

The *Breve causae* for Matthew, which begins on folio 8r, continues for six and a half pages, ending on folio 11v. The *Argumentum* of Matthew begins on folio 12r and ends on the verso. The *Breve causae* for Mark begins on folio 13r and continues for nine more pages, ending on folio 17v. There is no *Argumentum* for Mark. The *Argumentum* for John follows, beginning on folio 18r and ending on folio 19r. The *Breves causae* for Luke and John follow. There is no *Argumentum* for Luke (see Table 3 for an exact accounting of the *Breves causae* and *Argumenta* for all four Evangelists). The prefatory material ends with folio 26 which contains a glossary of Hebrew names to Luke, laid out in two columns.

Table 3. Tracking the *Breves causae* and *Argumenta* in the Book of Kells.

Evangelist	Item	Beginning Folio	Number of Pages
Matthew	<i>Breve causae</i>	8r	8
Matthew	<i>Argumentum</i>	12r	2
Mark	<i>Breve causae</i>	13r	10
Mark	<i>Argumentum</i>	Missing	0
Luke	<i>Breve causae</i>	19v	9
Luke	<i>Argumentum</i>	Missing	0
John	<i>Breve causae</i>	24r	4
John	<i>Argumentum</i>	18r	3
<b>Total pages</b>			<b>36</b>

Source: P. Brown, *The Book of Kells. Forty-eight pages and details in color from the manuscript in Trinity College, Dublin*, (London: Thames and Hudson, 1980).

## Gospel of Matthew

Looking at other surviving manuscripts as examples, it appears that the plan for the Book of Kells was to begin each of the gospel texts with an illustrated page containing all four Evangelists symbols (the angel for Matthew, the lion for Mark, the ox for Luke, and the eagle for John), and a portrait page of the author Evangelist. Folio 27 is a single sheet. The recto, originally blank with no text or illustrations, now contains twelfth-century charter text. The verso (f. 27v) contains an illustration of the four Evangelists symbols. The facing page, folio 28r is blank with the verso (f. 28v) containing a portrait of St. Matthew. These single folios marking the beginning of the gospel text again suggest the likelihood that single sheets were prepared so that they could be placed into the manuscript as needed. This eased the planning process of manuscript production. A set of scribes could be tasked with working on elaborately decorated pages while other scribes concentrated on the text. One set of scribes could work on single folios while other scribes worked on bifolia.

The gospel text begins on folio 29, the beginning of a gathering (quire 5). The text of Matthew begins with an accounting of the genealogy of Christ (Matthew 1:1–17) which continues through folio 31v. The text on folio 29r, *Liber generationis* [The book of the genealogy of...], is the only text that appears on the page and is hard to decipher unless one is familiar with the way in which scribes fused text and design together. The letter *l* starts at the top left corner of the page and curves to the left and then to the right and intersects into the left side of what appears to be a circle. The letter *i* spans the length of the page and contains three medallions, one at the top, one that intersects with the

letter *l*, and the third at the end of the *i* near the bottom of the page. The previous mentioned circle is in fact the bowl of a lower case letter *b*. The downward stroke is located at the top and directly in the center of the circle. Inside the circle are the letters *e* and *r* intertwined with the tail of the letter *l* which ends with a zoomorphic head. At the top of the page begins an interlaced border that runs down the right side of the page that breaks to the left, then down again to the bottom of the page, across the bottom of the page to the right, and then comes back up the page but does not connect back to itself. Inside this border is the word *generationis* broken into three lines of text. The opening between the interlaced border appears to be a device intended to direct the reader to the text on the next page. The figure to the left of the design appears to be an afterthought to fill the blank space on the page. The awkwardness of the figure seems to suggest that it was not part of the original design. Once the original design of the page was completed, the artist or scribe may have added the figure at that time because the pigment colors in the figure are the same as those used in the text and the rest of the design on the page.

The following five pages of text (ff. 29v-31v) are of particular interest because the text appears in two columns. It is the only instance in the text of the four gospels where two columns are used. Another item of interest is that on these pages we can see how scribes designed and prepared manuscript pages.

The first of these pages, folio 29v, continues with the genealogy of Christ, *Iesu Christi filii David...* [Jesus Christ, the son of David...], and is the only page in the Book of Kells that has no decoration or coloring of any sort. Careful examination of the page shows that the items from the previous page such as the letter *l*, the figure at the top of the

page, and the figure on the side of the page are visible through the vellum. In addition, circles are faintly visible, three in the center and two each on the sides, around the text. These are most likely a result of pressing against the facing page, folio 30r.

The seven circles on folio 30r are painted yellow and are equal distance from each other forming the basis of a planned design. The exactness of the circles demonstrates the use of a compass in manuscript preparation. On folio 30v there is more evidence of how the design on a manuscript page was prepared. On this page the underdrawing of the border can be seen. In the top left corner are the beginning drawings of two intricate heads, the first, a cat at the top of the page is facing to the left, and the second, a head of bird just underneath is facing the top of the page. The body of the cat forms the top and right borders of the page, ending in the bottom right corner of the page. The body of the bird forms the left and bottom border of the page, also ending in the bottom right corner of the page. Here in the bottom right corner we can again see the preliminary drawings of the intricate interweaving of these two creatures. As on folio 30r, yellow pigment has been added to various elements on the page including some of the text.

Folio 31r also contains text and the beginning stages of a decorated page. The diamond in the center of the page not only serves as decoration, but is the letter *o* in the word *Omnes*. The last page in this section, folio 31v, returns to a single column of text that runs across the full width of the page. While there is no decoration on this page, some yellow paint was added to some of the letters. The fact that the text on this page spans the full width in a single column seems to suggest that the scribes had planned for the full text of the genealogy of Christ to fit on the four pages in a two-column format

(ff. 29v–31r). There are thirteen lines of text in each of the columns. The last page (f. 31v) contains three lines of text with the remainder of the page left blank. As for the content of the text, there is no logical break or explanation for this text's appearing in a single column except that it appears that it could possibly be an overrun, that the text was supposed to end on the previous page (f. 31r). As stated, these pages provide examples of the steps involved in manuscript production: (1) rules were added to the vellum to ensure straight rows of text, (2) borders and illustrations were added as the underdrawing, (3) the text was added, and then (4) painting of the text and illustrations. In these pages, we can see that yellow pigment was added to the text on the pages. This suggests that once a pigment was prepared, it was used to decorate a series of pages as it could not have been easily stored for re-use.

Folio 32 is a single sheet with the recto being blank and the verso containing an illustration of Christ. Folio 33 is also a single sheet. The folio has been placed in the book so that the decoration faces the portrait of Christ with the verso being blank. Folio 33 is often called a carpet page because its decoration looks similar to a Persian rug. This page, referred to as the Eight-Circle Cross page, is the only carpet page that appears in the Book of Kells. The verso is blank but faces the most elaborately decorated page of the manuscript, the Chi Rho page (f. 34r). The Chi Rho page is a single sheet with the text of Matthew (Matthew 1:18) continuing on the verso (f. 34v). The Chi Rho page is often considered the second beginning of the gospel of Matthew. In Greek, Chi Rho, the letters written XP, is shorthand for Christ. In this case, the Chi Rho page actually contains the letters XPI which is the Latin shorthand for Christi. The text that



follows the genealogy of Christ begins with *Christi autem generatio...* [Now the birth of Jesus Christ...] and appears on the Chi Rho page as *XPI h generatio*. The letter *x* takes up almost the full length of the left side of the page, with the right side of the letter taking up half of the right side on the page. Underneath is the letter *p* wrapping around the letter *i*. The word *autem* is abbreviated by the letter *h* with the word *generatio* immediately following. The text of Matthew (Matthew 1:18), *...sic erat: Cum esset...* [...was as follows...] continues on the verso of this page (f. 34v).

The quire ends with folio 40v, the beginning of the Beatitudes in Matthew 5. This is an elaborately decorated page with eight letter *b*'s running from top to bottom on the left side of the page. The tops of the first four *b*'s are heads of men with their torsos forming the bowl of the letter and their legs forming elaborate flourishes to the letters. The tops of the bottom four letter *b*'s are heads of creatures with their bodies forming the bowls and legs forming a flourish to the letters. Unlike the legs of the men which point to the bottom of the page, the legs of the creatures point upwards.

The text for Matthew ends on folio 129r and contains all twenty-eight chapters of Matthew's gospel.<sup>72</sup> All of the pages contain seventeen lines of text, a good indicator that these pages could have been prepared at the same time and/or by the same person. There is one fully illustrated page in Matthew, folio 114r, which depicts the arrest of

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<sup>72</sup> Originally, there were no page numbers in the Book of Kells. At some point, someone wrote page numbers on the bottom left corner of the recto pages. Unfortunately an error occurred with the number 36 being written on two pages. The error in numbering has been denoted with an asterisk (\*) placed after the second appearance of the number 36. The numbering continues sequentially from that point but if one is counting pages to get to a certain point, one must remember to accommodate for the misnumbering.

Christ. Unlike other fully illustrated pages, this is not a single folio and the text of Matthew continues on the verso, in a highly decorative fashion.

### **Gospel of Mark**

The beginning of the gospel of Mark is indicated with a single folio, illustrated with all four Evangelists (f. 129v). There is no portrait of St. Mark leading to speculation that at least one folio is missing here. The text of the sixteen chapters that make up the gospel of Mark begins on folio 130r and continues through folio 187v.

The final page of Mark (f. 187v) is interesting because upon quick glance it appears to be an incomplete page of Evangelists symbols, a page that normally indicates the beginning of a new gospel. The page contains intricate borders on the left and right sides of the page. A large green *x* is between the borders. The symbol for Matthew, the angel, appears in the left side of the *x* and the symbol for Mark, the lion, appears in the right side of the *x*. The ending text of Mark has been written into the upper and lower portions of the letter *x* which appears to be well planned, because the text fits perfectly.

There are no fully illustrated pages in Mark. Each page contains seventeen lines of text, again indicating that these pages were made at the same time and/or by the same person. There is some text missing between folios 177 and 178.

### **Gospel of Luke**

The gospel of Luke begins on folio 188r, with the word *Quoniam*, in a highly intricate fashion. There is no page with the four Evangelists symbols or a portrait of St. Luke again leading to speculation that some pages have been lost at some point. The genealogy of Christ begins on folio 200r and ends on folio 202r. These folios maintain

the seventeen lines of text that is predominate throughout the Book of Kells. The genealogical list of the ancestors of Christ is presented in a list format rather than a solid block of text. The list ends on the thirteenth line of folio 202r. An illustration was added to the bottom of the page to fill in the blank space of the last four lines of text. Folio 202v contains an illustration of the temptation of Christ. Unlike other folios that contain illustrations, this is not a single folio but the verso of a bifolium. This illustration faces a heavily illustrated page of text.

The text of Luke ends on folio 289r. Charter text has once again been written on folio 289v which was originally left blank. Folio 290r contains the explicit—"the closing of a textual unit"<sup>73</sup>—of Luke at the top of the page, and the incipit—"the opening words of a text"<sup>74</sup>—of John at the bottom of the page. The text on this page is written with red ink. The explicit is written on five lines and has the appearance of being written in two columns, however there is simply a large gap between the words. A total of ten words make up the explicit with two words per line. The incipit of John is on two lines of text and appears to contain a total of five words.

All twenty-four chapters of Luke are present. There is some text missing between folios 239 and 240. Folios 189r through 259v contain seventeen lines of text and folios 260v through 289r contain sixteen lines of text. This suggests that this part of the manuscript was either prepared by different scribes and/or prepared at different times.

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<sup>73</sup> Michelle P. Brown, *Understanding Illuminated Manuscripts: A Guide to Technical Terms* (Los Angeles: Getty Publications, 1994), 56.

<sup>74</sup> *Ibid.*, 72.

## **Gospel of John**

Folio 290v, a single sheet, contains a full page of Evangelists symbols, indicating the beginning of the gospel text of John. Folio 291r is blank with the verso containing a portrait of St. John. This is another single sheet. The text of the gospel of John begins on folio 292r and is heavily illustrated (the top of the page also shows signs of considerable trimming, most likely a result of the botched rebinding that took place in 1821). The gospel of John continues through folio 339v, the last page that exists in the Book of Kells. The gospel of John consists of twenty-one chapters but the last chapters are missing, probably a result of being lost when the cover was stolen. The missing text between folios 330 and 331 suggest that there are three leaves missing here as well. Unlike the other gospel texts, John contains eighteen lines of text per page except for folio 312 which contains nineteen lines of text. This difference in number of lines of text per page again suggests that different scribes worked on this part of the manuscript and/or that it was produced at a different time as the other portions of the book.

Table 4 details the components of each of the gospel texts. Appendix C contains a detailed diagram of the layout of the entire Book of Kells. The information in the appendix is presented in a reader spread, i.e., the pages are presented as the readers would see them if the book were in front of them.

Table 4. Elements of each gospel.

Gospel	Page with the Four Evangelist Symbols	Evangelist Portrait	Folios with Text (Number of pages)	Total Number of Chapters
Matthew	27v, ss	28v, ss	29r-129r (203)	28
Mark	129v, ss	missing	130r-187v (116)	16
Luke	missing	missing	188r-289r (203)	24
John	290v, ss	291v, ss	292r-339v (98)	21

*Sources:* Trinity College Library Dublin, *The Book of Kells*, (Dublin: X Communications, 2004); Erika Eisenlohr, "The puzzle of the scribes: Some palaeographical observations." In *The Book of Kells. Proceedings of a Conference at Trinity College Dublin. 6-9 September 1992*, ed. Felicity O'Mahony (Dublin: Scolar Press, 1994) 198-199.

*Note.* ss indicates a single sheet (folio).

#### 4. Preparation and Planning for Manuscript Production

As mentioned in chapter 2, the vellum used for manuscripts came from prenatal or very young calves. Once the skin was removed from the animal, the hair was scraped from the skin and then it was soaked in a solution for several days so that any remaining hair could be removed from the skin. The skins were then stretched on a frame for several more days. Once the skin had been sufficiently scraped and stretched, it was left to dry and then cut from the frame and stored flat until ready for use. When the scribes were ready to use the vellum for their manuscript, the sheet of vellum was cut to the size they would need, which depending on the size of the skin, would yield either single folios or a bifolium or bifolia.

A single folio allows for two pages of text—the front and back. Once folded, a bifolium becomes two sheets with four pages of text. All vellum has a hair side which according to Brown and Lovett (1999) has more color and character to it and possibly visible hair follicles and a flesh side which is whiter and smoother with a waxy finish.<sup>75</sup> Before any text was written on the vellum it was marked with rules that ran horizontally across the page so that the lines of text would be straight. The scribes used a piece of lead (the precursor to the pencil) or a parchment pricker to create these lines. By using a parchment pricker, the scribe could score the piece of vellum just hard enough so as not to cut the vellum but to leave an imprint that could be detected on both the front and back of the vellum. For a folded bifolium, the scoring was done hard enough to reach the second sheet. Upon examination of the Book of Kells, the line numbering is often

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<sup>75</sup> Brown and Lovett, *The Historical Source Book for Scribes*, 14.

consistent across the current conjoint bifolia to confirm this process of manuscript production. In addition, when the quires were assembled like sides of the vellum were placed facing each other, that is, hair side would face hair side and flesh side would face flesh side. Again, this technique is verified upon examination of the current folios in the Book of Kells.

Once the scoring had been completed, the bifolia was unfolded. Text and decoration were added to flat, unfolded sheets of vellum. This is an important key to understanding manuscript production because this means that the text that appears on the vellum does not always flow fluidly from one page to the next. In the example provided in Figure 2, one can see how on the first bifolium the left side of the front of the vellum contains the text for page 8 and the right side contains the text for page 1. The reverse side of the vellum contains the text for pages 2 and 7. The front side of the second piece of vellum contains the text for page 6 on the left and page 3 on the right. The back side of the vellum contains the text for pages 4 and 5.

After the text and decoration were added to the vellum, the sheets of vellum were gathered together to form a quire (see Fig. 2, right). This step illustrates the importance in planning out the text before it is placed on the vellum. The scribes had to have a general idea of what passage of text was going to be placed on each side of the vellum to ensure that the text flowed correctly once the quires were formed. In the Book of Kells, the number of sheets of vellum that formed a quire were inconsistent and did not always follow a set number. Several sources indicate that the number of sheets of vellum used to

make up the quires varied from three to six.<sup>76</sup> Examinations of selected parts of the Book of Kells will allow one to see the steps involved in the production process and how the pages were planned out before the text was added to the pages.

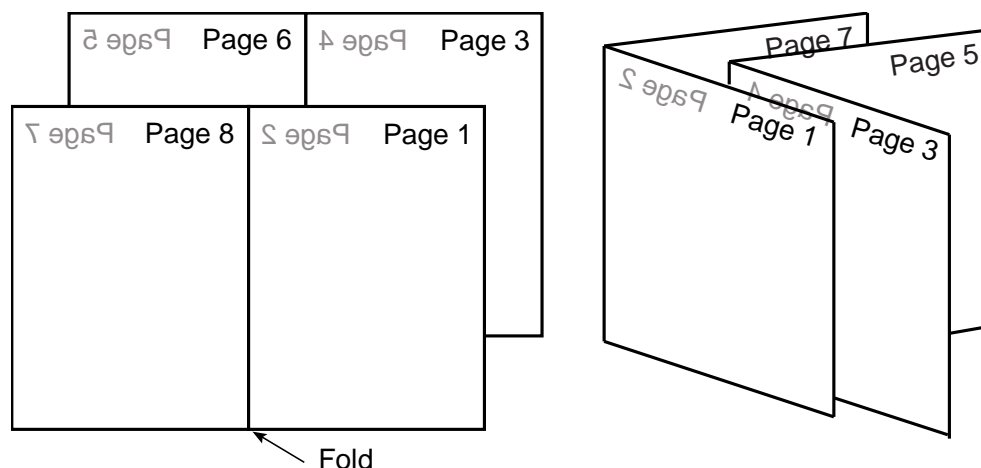


Figure 2. Example of the foliation of sheets of vellum; *left*, one bifolium contains four pages of text; *right*, bifolia folded to form a quire. Adapted from Seattle CD DVD Duplication Resources - Booklet Printer Spreads, <http://www.seattle-cd-dvd-duplication.com/resources/graphics/printer-spread.htm>

### An Examination of Folios 29v–31v

Our knowledge of manuscript production is aided by folios 29v–31v where we can examine step by step the process for planning and laying out the text and design on a page. These five pages are in various stages of production, almost as if they were purposefully left as examples of how to produce a manuscript.

<sup>76</sup> See for example, figure 1 in Erika Eisenlohr's "The puzzle of the scribes: some palaeographical observations" in Felicity O'Mahony, ed., *The Book of Kells. Proceedings of a Conference at Trinity College Dublin. 6-9 September 1992* (Dublin: Scholar Press, 1994), 198-99.



As we will see on these pages, before the text is written on the vellum, lines for maintaining straight rows of text are first drawn or impressed onto the vellum.

Decorative elements, such as borders, are also drawn onto the vellum then the text is added followed by the addition of color.

Folio 29v contains two columns of text and is void of any decoration or color.

While some of the illustration from folio 29r can be seen through the vellum, outlines of circles and a stepped pyramid on folio 29v are not bleed throughs from folio 29r but are the underdrawing of decoration meant for folio 29v. A page border on the outside edges of the page, surrounding the text, is still visible. The portion of the border along the bottom of the page includes a stepped pyramid, centered in the middle of the page above the outline of a circle. More steps are seen on the bottom left corner of the page.

Folio 30r has two columns of text on thirteen lines. Unlike the circles on folio 29v, the seven circles on folio 30r, two each on the left and right sides of the page and three in the middle of the page, between the two columns of text, have had yellow pigment added to them. The yellow pigment is most likely orpiment, one of the more commonly used pigments in the Book of Kells. A few of the letters have been decorated with the yellow pigment: the flair to the left of the letter *h* in the word *hab* in the first line of text in the left column, the letter *s* in the word *Salamon* in the second to last line of text in the left column. In the column of text on the right, in the fourth line of text, the *a* in *autem* has been colored yellow as has the letter *o* in the word *Ozias* in the third to the last line of text. The yellow pigment in the text and decoration was most likely added at the same time as the process for preparing pigment was complex. Once the pigment was prepared,

it had to be used. It could not be saved for later use. Some additional color and decoration can be seen on this page: the *o* in the word *obed* in the third line of the left column has some purple added to it, as does the *a* in the word *autem* in the eighth line in the left column. It appears that there is some purple in part of the *m* in the word *autem* in the ninth line in the right column. The same purple was used on the next page, folio 30v where we can see more evidence of the different stages involved in producing a page in a manuscript.

Folio 30v is another page with two columns of text. This page also contains thirteen lines of text. As explained earlier, the lines for these two pages were most likely marked at the same time. For example, when the lines were marked or indented for folio 30r, the marks or indentations could have gone through to the opposite side of the vellum, folio 30v. The drawing for the border surrounding the text is clearly visible. Yellow pigment has been applied to the decorated elements as well as the text. The two full circles between the two columns of text contain additional decoration in black ink. Purple pigment outlines the yellow diamond in the center of the page. Decoration in the upper left corner and bottom right corner are starting to take shape with the addition of details and colors. For example, in the upper left corner the head of a creature (most likely a cat) is looking to the left edge of the page. The details of the creature including the nose, eye, mouth, and ear can be seen with some yellow and purple coloring added to it. Directly underneath, looking into the mouth of this creature is the head of a bird. Again, details including the eye and beak and some yellow and purple pigment have been added to this head. The torsos of these two creatures form the borders that outline the

text, with the tail and feet of these creatures meeting and intertwining with each other in the bottom right corner of the page.

Folio 31r looks much the same as the two proceeding folios, with two columns of text and the beginning stages of decoration with the addition of yellow and purple paint. The end of this series of text, the genealogy of Christ ends on folio 31v. The text on this page is in a single column that spans the entire width of the page and contains only three lines of text. There is some yellow pigment added to some of the text but there is no other decoration or visible sign of any planned decoration.

An examination of folios 218v and 219r will provide another opportunity to examine the manuscript production process by demonstrating how the folios were reviewed and decorated once the text had been added to a page.

### **Examination of Folios 218v and 219r**

Folio 218v contains the text of Luke 7:38–44 on seventeen lines of text in a single column that spans the full width of the page (see Fig. 3). Some of the text has some color added to it in the *et* ligature in the first line of text and again in the *et* ligature in the tenth line of text. Decorative elements in red pigment border the page as well as appear between several lines of text. Irish crosses (crosses intersected with a circle) surround the text: two on the top center of the page, two on the left edge of the page, and three on the bottom of the page. There are also four regular crosses that run down the center of the page between the lines of text. The border drawn in the top left corner is duplicated—after being rotated left 90 degrees—in the bottom left corner of the page.

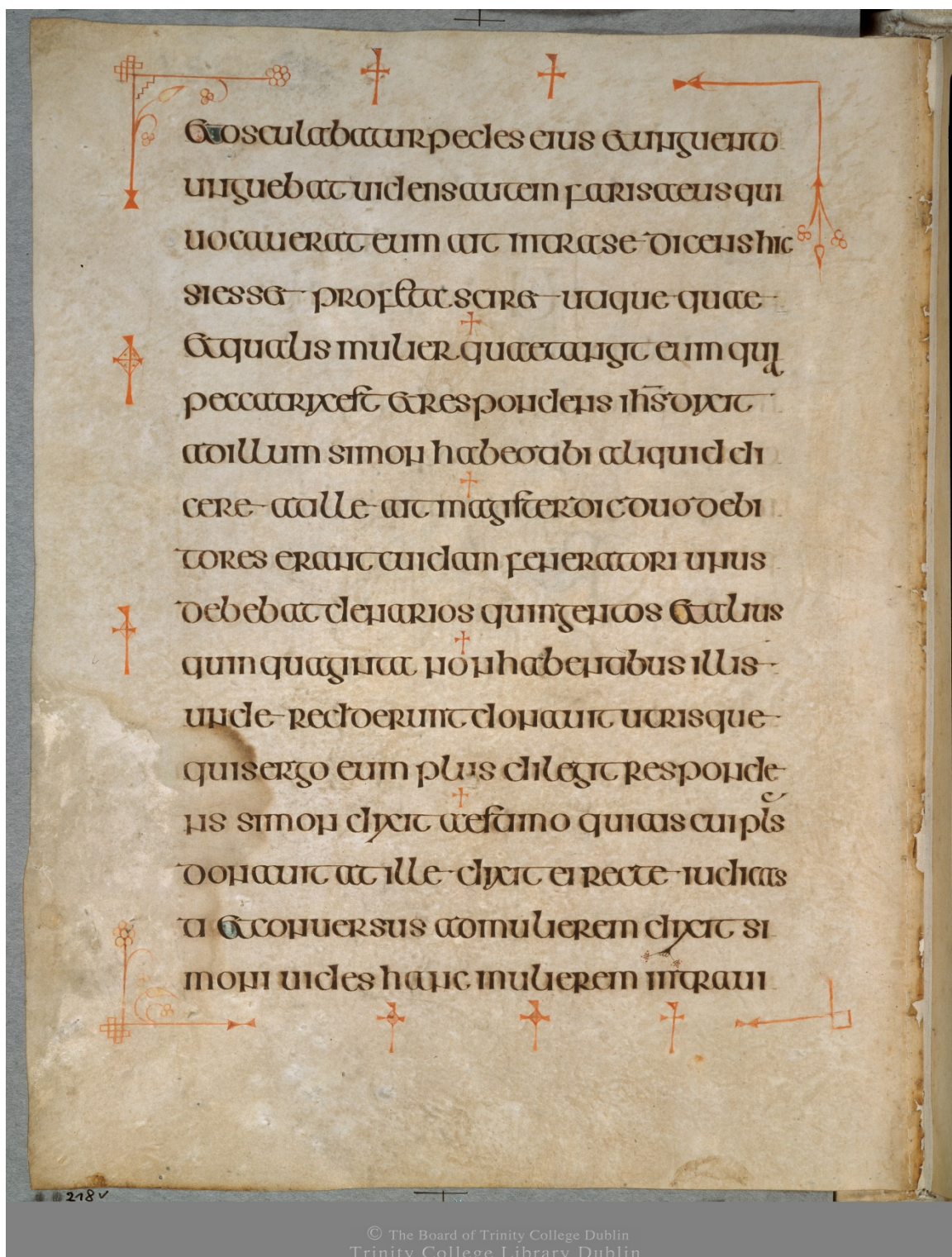


Figure 3. Folio 218v, Book of Kells. Permission courtesy of The Board of Trinity College Dublin.

Scholars have noted that the text on folios 218v and 219r is duplicated and that the red crosses and borders are a technique for indicating that folio 218v is an error—the text has been crossed out. Because the gospel text is considered the sacred word of God, reverence has been taken to delete the error by using holy crosses. As the process has been described once the text was added to the page, it was passed on to a rubricator, a person tasked with adding color to the page. The rubricator was also often responsible for reviewing the text for errors. In this sequence of text an error occurred, but at what point in the process? A look at the quire (quire 25) will help us understand more about the production process and how the error was spotted and the steps that were taken to correct the error.

The quire begins with folio 217 and ends with folio 223. The text spans from Luke 7:21 to Luke 8:41. The quire contains three bifolia. Folio 219 is a single folio. As explained earlier, text was added to an unfolded sheet of vellum. Figure 4 shows the first bifolium, unfolded, in the quire. Luke 8:35-41 appears on the left side of the vellum and Luke 7:21-27 is on the right side of the vellum. The reverse side of the vellum contains Luke 7:27-32 on folio 217v and Luke 8:30-35 on folio 223r (see Fig. 5).

The next bifolium contains Luke 8:26-30 (*f.* 222v) on the left side and Luke 7:32-38 (*f.* 218r) on the right side of the vellum with the reverse side contains Luke 7:38-44 (*f.* 218v) and Luke 8:22-26 (*f.* 222r). The third bifolium in the quire contains Luke 8:16-21 (*f.* 221vr) and Luke 8:1-5 (*f.* 220r). The reverse side contains Luke 8:5-12 (*f.* 220v) and Luke 8.12-16 (*f.* 221r). Table 5 details the breakdown of the text and the folio that

the text appears on and includes a theoretical sequence of the text being added to each sheet of vellum.

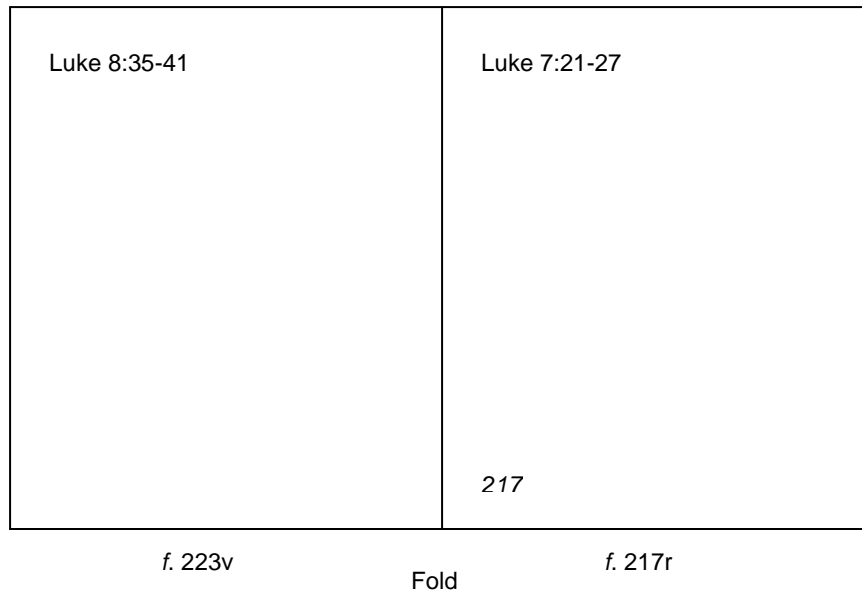


Figure 4. Unfolded folio 217.

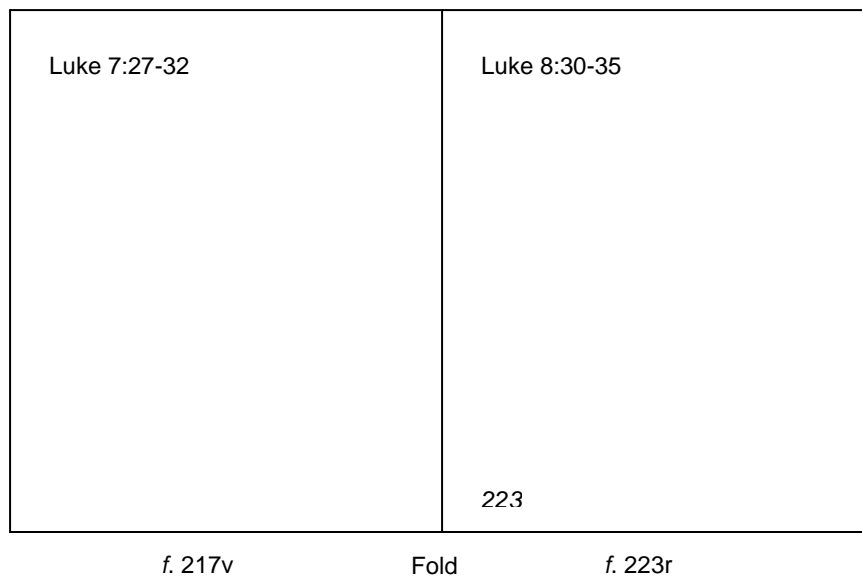


Figure 5. Reverse side of folio 217.

Table 5. Sequence of text in quire 25.

Text	Folio	Page Count (sequentially)	Bifolium	Theoretical Sequence of Page Preparation
Luke 7:21-27	217r	1	1, front, right	1
Luke 7:27-32	217v	2	1, back, left	4
Luke 7:32-38	218r	3	2, front, right	2
Luke 7:38-44	218v	4	2, back, left	5
Luke 7:44-8:1	<sup>a</sup>	5		
Luke 8:1-5	220r	6	3, front, right	3
Luke 8:5-12	220v	7	3, back, left	6
Luke 8:12-16	221r	8	3, back, right	6
Luke 8:11-21	221v	9	3, front, left	3
Luke 8:22-26	222r	10	2, back, right	5
Luke 8:26-30	222v	11	2, front, left	2
Luke 8:30-35	223r	12	1, back, right	4
Luke 8:35-41	223v	13	1, front, left	1

<sup>a</sup>This text was added to the single folio 219 once it was found to be missing from the completed pages.

Using our knowledge of manuscript production where text was added to an unfolded sheet of vellum,<sup>77</sup> we can surmise that the text of Luke 7:21-27 would have been added to the sheet of vellum (in this case, the right side of the first piece of vellum). The text for Luke 7:27-32, which would appear on the reverse side of where Luke 7:21-27 appears, could not have been added until the front side of vellum had dried. The same sequence would take place for the text of Luke 7:32-38 on the second sheet of vellum. This is the point at which it appears that an error occurred. The text for Luke 8:1-5 was added to the third sheet of vellum instead of the text for Luke 7:44-8.1. To correct this error, the missing text was added to a single folio and then inserted in the appropriate location in the quire.

<sup>77</sup> Brown, *The Lindisfarne Gospels. Society, Spirituality and the Scribe*, 205.

This theory is also supported by looking at the hair and flesh characteristics of the sheets of vellum. When the quires were put together, like sides of the skin were situated so that they would face each other—hair side faced hair side, flesh side faced flesh side. Folio 217v, which was written on the hair side of the vellum, faces folio 218r which was also written on the hair side of the vellum. If we remove folio 219 from the quire, we will see that folio 218v now faces folio 220r and both folios have been written on the flesh side of the vellum. This would have been the original plan for the quire, so it is clear that folio 219 was added to correct an error in the sequence of text. Once the missing text was added to folio 219, it must have been decided to repeat the text of Luke 7:38-44 instead of leaving a blank page or adding a full illustration to the reverse side of the page. At this point, the scribes then “deleted” the text from folio 218v.

### **Drop Caps/Large Historiated Letters**

One of the design features the scribes used that is still in existence today is what is known as the drop cap. To apply the drop cap using today’s computer technology, the modern day scribe would place the cursor in front of the desired letter and then determine the number of lines of text to drop the letter (see Figures 6 and 7).

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Aenean mollis imperdiet cursus. Aenean quis arcu risus, eget lacinia arcu. Aliquam scelerisque nulla nec libero eleifend viverra. Donec varius urna ac nulla iaculis congue. Vivamus a purus arcu, vitae porttitor mi. Vivamus id dui eros. Donec sit amet nibh mauris, et tempor justo. Fusce orci metus, ultricies in luctus at, iaculis eget ligula. Donec sollicitudin facilisis odio, non vehicula orci volutpat quis. Aliquam erat volutpat.

Figure 6. Example of text without a drop cap



**L**orem ipsum dolor sit amet, consectetur adipiscing elit. Aenean mollis imperdiet cursus. Aenean quis arcu risus, eget lacinia arcu. Aliquam scelerisque nulla nec libero eleifend viverra. Donec varius urna ac nulla iaculis congue. Vivamus a purus arcu, vitae porttitor mi. Vivamus id dui eros. Donec sit amet nibh mauris, et tempor justo. Fusce orci metus, ultricies in luctus at, iaculis eget ligula. Donec sollicitudin facilisis odio, non vehicula orci volutpat quis. Aliquam erat volutpat.

Figure 7. Example of text with the first letter dropped three lines

When this technique is applied, it results in the text's shifting to the right as can be seen where the word *imperdiet* moves from the end of the first line (Figure 6) down to the start of the second line (Figure 7) thus forcing words on the second line down to the third line. In the examples, what was originally six lines of text is now seven lines of text.

Scribes experienced the similar effect of a shift in text when they created historiated (large, decorated) letters on manuscript pages. The start of new or important passages or chapters was often indicated by elaborately decorated letters. As stated earlier, in preparing the manuscript page, the scribes would mark lines on the pages to indicate where to place the text. Once the text had been added, the page would be decorated with pigments. The illustrator or rubricator would be responsible for adding the pigment or decoration to the page which would include the historiated letters. While the majority of the decorated letters occur on the left edge of the text, there are several cases where a decorated or oversized letter appears in the middle of the page as can be seen on folio 92v (see Fig. 8).

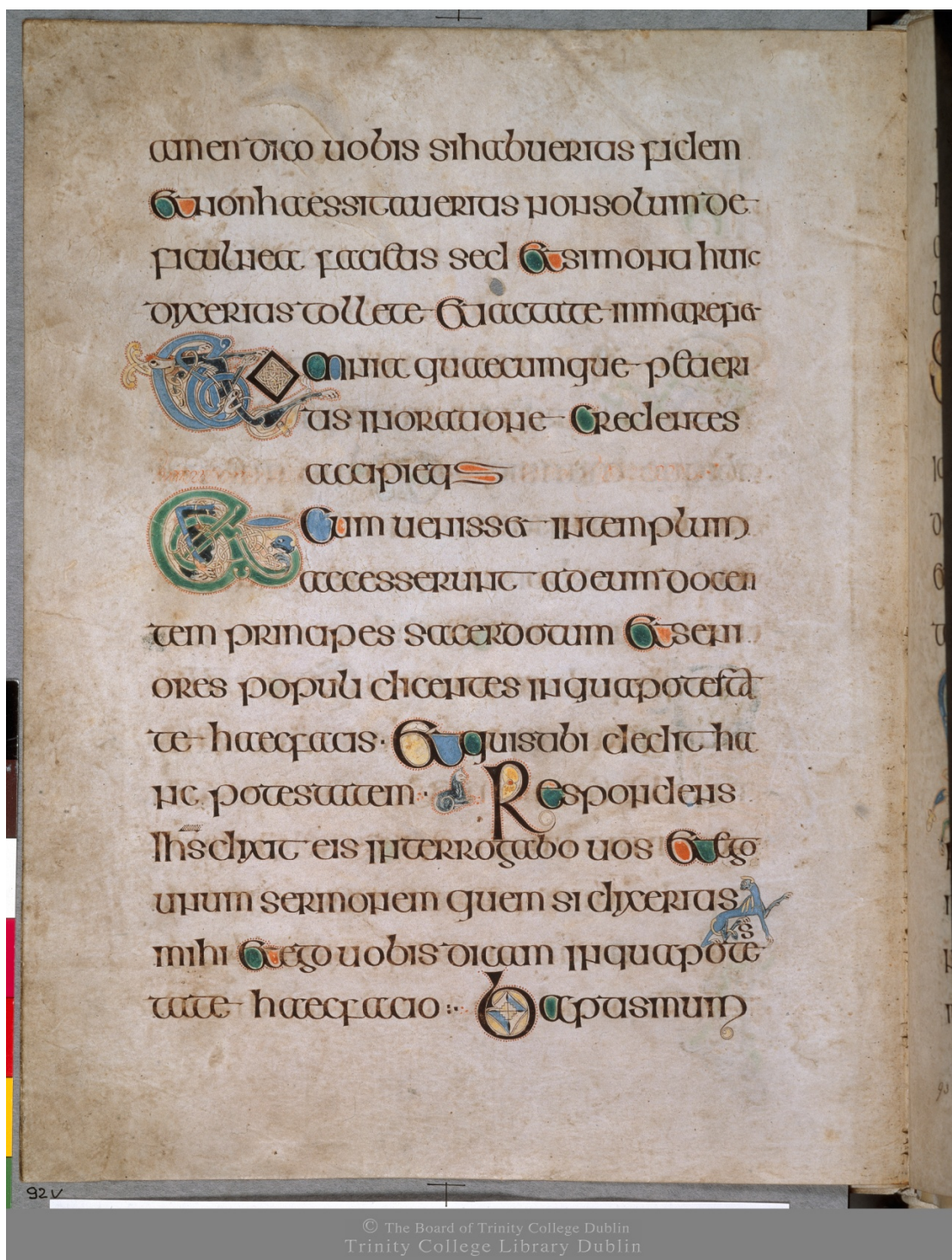


Figure 8. Folio 92v, Book of Kells. Permission courtesy of The Board of Trinity College Dublin.

On folio 92v, there are two *et* ligatures in the second and third lines of text decorated with green and red pigment. The fifth line of text begins with an elaborately illustrated oversized *et* ligature that envelopes the letter *o* in the word *omnia*. While the letter *m* in *omnia* has been decorated with green and blue pigment, the text returns to the regular majuscule. That same letter *m* becomes the indentation point of the remaining text for that passage and the first two lines of text for the subsequent passage. Another oversized *et* ligature is used on the eighth line of text. The ninth line of text follows the same indentation as the eighth line of text. The text on the fifth, sixth, and seventh lines was indented to make room for the *et* ligature. Towards the bottom of folio 92v, space was left to accommodate the oversized letter *r* for the word *respondens*.

Using this decorative technique to indicate the beginning of a new or important passage was somewhat unusual at this time because words were often run together with little or no space between words. Punctuation between sentences was not used at this time either. The scribes would have had to know in advance that they had to leave space for the elaborately decorated letters.

On folio 293v, the historiated letters are handled differently (see Fig. 9). Rather than being in line with the text, the letters are to the left of the text in the margin. For example, the *r* in *Responden* is handled much differently than the way in which it was handled on folio 92v. Here on folio 293v, rather than leaving a space, the historiated letter *r* has been placed in the margin. This meant that little planning was needed for this page. As the scribe added the text to the page, he had to know which letter would go in the margin and not include it on the line of text. In addition, he did not have to leave



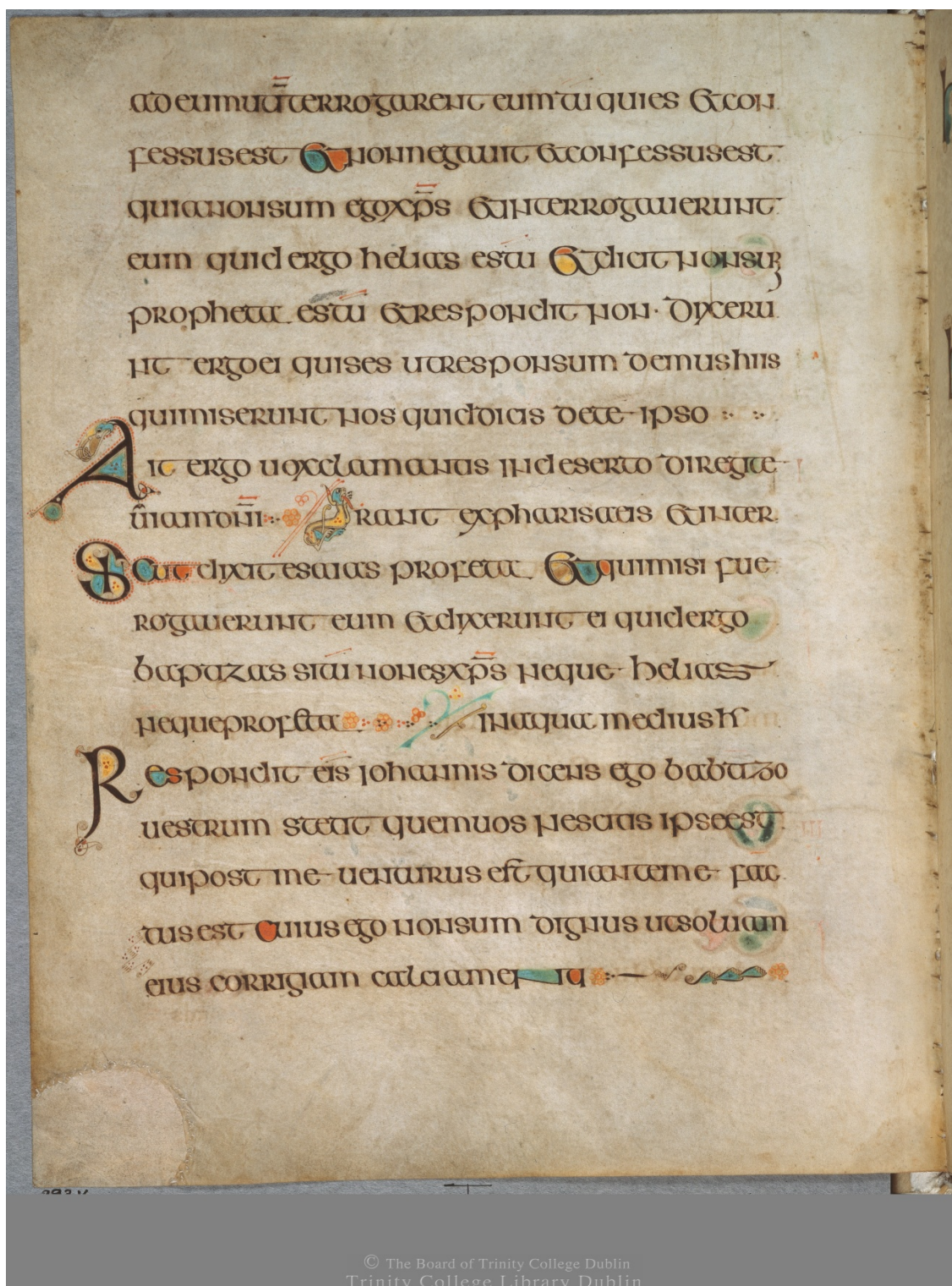


Figure 9. Folio 293v, Book of Kells. Permission courtesy of The Board of Trinity College Dublin.

space in the text for the illustrator or rubricator who decorated the page. Folio 296v provides a strong example of this process. On this page the historiated letters, which all happen to be the letter *r*, are in the margin. The decoration for one of the letters has been completed while the remaining two letters have been sketched out but not yet decorated.

Another noted difference about these folios is that they contain eighteen lines of text, whereas in other parts of the manuscript, there are seventeen lines of text. This leads to several theories: (1) This part of the document was made by a different scribe who instead of using seventeen lines of text per page used eighteen lines text, (2) this part of the document was made at a different time when eighteen lines of text per page was the standard as opposed to seventeen lines of text, or (3) materials, such as the vellum, were running scarce and to economize, more text was placed on the pages.

### Turn in the Path

The final item that will be looked at is a technique the scribes used that is known as “a turn in the path.” Folio 309r contains an example of a turn in a path (see Fig. 10). The text on this page begins with John 6:37, “*Omne quod dat mihi Pater, ad me* [first line] *veniet; et eum qui venit ad me, non eiicam* [second line] *foras* [third line]...”<sup>78</sup> Rather than continuing the text on the third line, the scribe placed the subsequent text (John 6:38) on the fourth line “*quia descendi de caelo, non ut faciam* [fourth line] *voluntatem meam* [third line], *sed voluntatem eius qui misit me* [fifth line]...”<sup>79</sup>

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<sup>78</sup> *Biblia Sacra. Vulgate Editionis. Iuxta PP. Clementis VIII Decretum*, Nova ed. (Milwaukee: Bruce, 1955), 305-06. This is the passage of the text as it appears in the *Biblia Sacra*. The text on the second line is slightly different: *veniet; et eum qui ad me venit, non eiicam*. In addition, the text from the *Biblia Sacra* contains punctuation which was not used at the time the Book of Kells was made.

<sup>79</sup> *Ibid.*, 306.



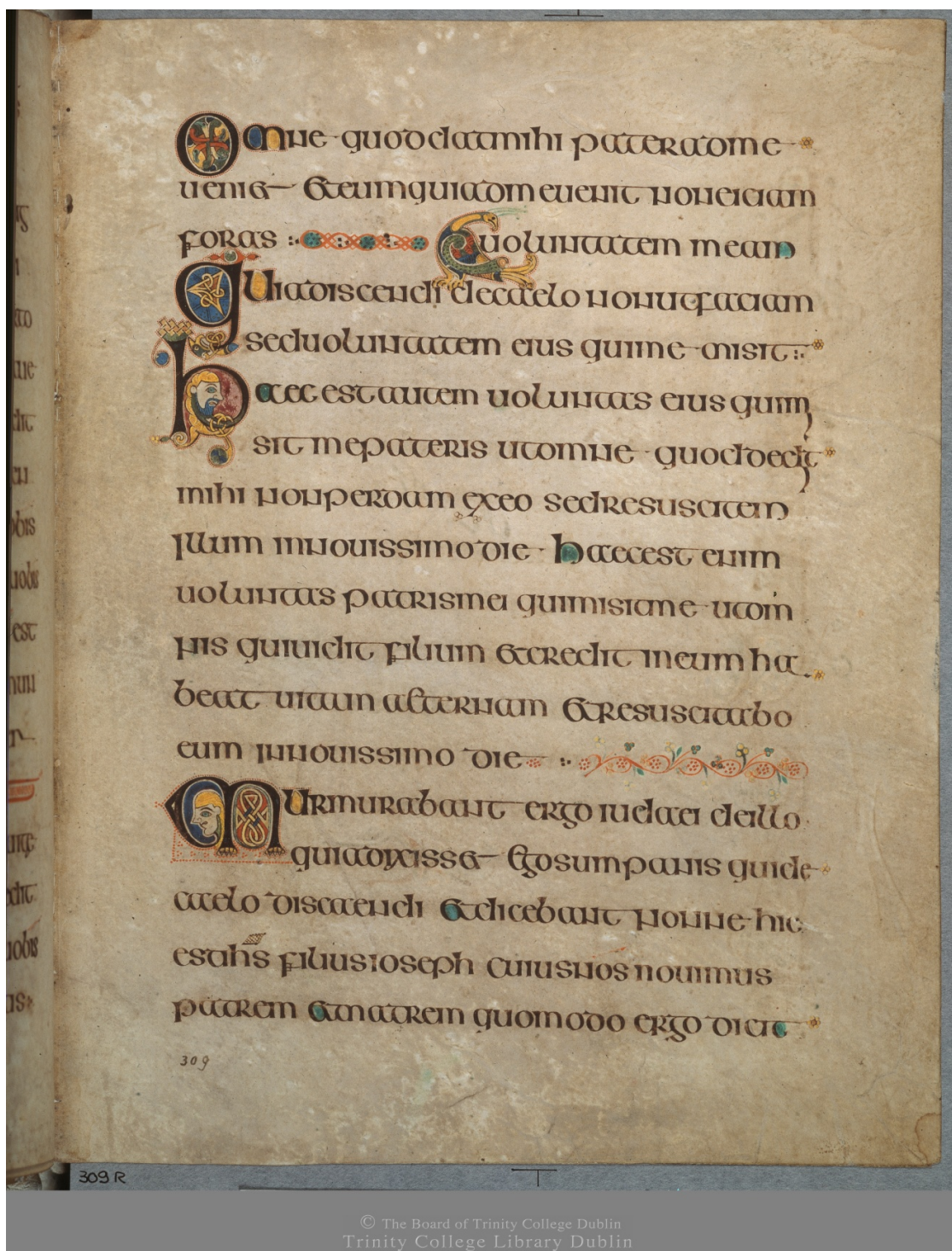


Figure 10. Example of a turn in the path, f. 309r. Permission courtesy of The Board of Trinity College Dublin.

When the scribe reached the end of the fourth line, he placed the subsequent text in the blank space that was left on the third line. When he reached the end of the third line, he continued on the fifth line. This turn in the path is indicated by the bird whose feet touch the fourth line of text and whose head points to the word *voluntatem*. The bird serves to direct the reader's eye up to the previous line of text.

In examining the page, it appears that the scribe wanted to decorate the letter *q* in *quia* and to do so he placed the word on the next line of text which gave him more room for decoration. Since he had empty space on the preceding line, he continued the text there which helped him economize with the vellum. Since vellum was a precious commodity for the monasteries and producing it was a time-consuming process, the monks had to plan the work carefully. Placing as much text on a page as possible could help reduce the number of sheets of vellum needed to make the Book of Kells.

## 5. Conclusion

This thesis has discussed the various steps that were involved in manuscript production. Obtaining or producing the materials was the first order of business in creating a manuscript. As discussed, some of these materials, such as the pigments, took time to produce and once they were produced they had to be used immediately because they had short shelf lives.

The main source of material for manuscripts, the vellum, required the most planning. Access to and the amount of vellum was dependent on the size of the herds owned by the monasteries. Large and flourishing herds were needed to ensure a steady supply of vellum. Once the vellum was prepared, scribes could not be wasteful with it. They had to ensure that they did not do anything to the sheet of vellum that would render it useless.

As noted in chapter 4, the actual process of writing text on the vellum was not as straightforward as one would think. The scribes wrote on vellum that was unfolded. They did not write out the text in a continuous flow from one page to the next. Because of the nature of the quire and the folding of the sheet of vellum, one part of a gospel text would appear on the left side of the vellum and an earlier part of the text would appear on the right side of the vellum. A scribe had to have a general idea of what text would appear on each sheet of vellum. He would have had to know how many sheets of vellum would appear in a particular quire. If the text did not fit on the vellum as planned, he would have to make adjustments in order to get the passage of text to fit on the allocated sheets of vellum.



Deconstructing the Book of Kells and looking at a series of items have aided in the process of understanding the planning and production of the book. Being able to unfold conjoint bifolium provides an opportunity to study the text and to see how the pages were decorated. Looking at the quires and the pages that made up the quires provide an insight to the process that the scribes used to produce the Book of Kells.

An unanswered question has been how many scribes made the Book of Kells. A popular theory has been posited that there were three scribes (Hand A, Hand B, and Hand C) who made the Book of Kells. Additional study of the quires and the bifolia within the quires would aid in identifying patterns in script styles, decoration, and use of colors within particular quires and could help prove or disprove the three-scribe theory. Further studies of the number of lines per page, how historiated letters were handled, i.e., placed in the text or in the margin, or the colors of pigment used within quires would aid in identify style preferences, thus lending support to the theory that more than one scribe made the Book of Kells and that it was a process that took several years.

## Appendix A

### Historical Timeline

The following timeline represents information as found in the sources that were used for this thesis. Items were added to the timeline as spelled by the author of the respective source. The majority of the abbreviations are my own and are defined as follows:

BOD	Book of Durrow
BOK	Book of Kells
EG	Echternach Gospels
HE	<i>Bede's Ecclesiastical history of the English people</i>
LF	Lindisfarne
LG	Lindisfarne Gospels
MS	Manuscript

Date	Event	People	MS	Source
<b>3rd century</b>				
280	Emperor Constantine			Brown/Lovett (1999)
<b>4th century</b>				
313	Edict of Milan: Legalized Christianity			Cahill (1995)
337	End of Emperor Constantine's reign		Codex Sinaiticus (BL, Add. MS 43725)	Brown/Lovett (1999)
382	St. Jerome commissioned to improve Latin translation of the Bible			Brown (1980)
<b>5th century</b>				
5th century	Introduction of Christianity in Ireland. Missions arrived in Ireland but could not make Ireland part of the empire because it was falling.			de Paor (1958)
401	Patricius (St. Patrick) is taken into slavery; Augustine publishes his <i>Confessions</i>			Cahill (1995)
406	Vandals, Alans, and Sueves ransacked Gaul			de Paor (1958)
407	Patricius (St. Patrick) returns to the continent			Cahill (1995)
409	Roman garrison abandons Britain			Cahill (1995)
410	Rome falls			Cahill (1995)
430	Patricius (St. Patrick) ordained	Augustine of Hippo dies		Cahill (1995)
431	Palladius sent to Ireland by Pope Celestine			Brown (2003), de Paor (1958)
432	Bishop Patrick (St. Patrick) arrives in Ireland			de Paor (1958), Cahill (1995)
461	Armagh becomes monastic	St. Patrick dies		de Paor (1958), Cahill (1995)
				de Paor (1958)

Date	Event	People	MS	Source
<b>6th century</b>				
6th century	Early 6th century, St. Finnian transformed Patrician church at Clonard into a monastery			da Paor (1958), Bieler (1963)
500	Brigid founds Kildare			Cahill (1995), da Paor (1958)
521		St. Columba born		Stalley (2008), Cahill (1995), Sullivan (1927)
549		St Finnian dies		Dunleavy (1960), Bieler (1963)
553	Columba founds monastery at Durrow			Sullivan (1927)
557	Columcille (St. Columba) leaves Ireland for Iona			Cahill (1995)
560	Aethelbert (Eethelberht) becomes king of Kent			
563	St. Columba leaves Ireland and goes to Iona and founds monastery			Henderson (1987), Stalley (2008), Brown (2003), Sullivan (1927), de Paor (1958)
564	Columcille (St. Columba) leaves for Iona			Cahill (1995)
583		St Brendan dies		Dunleavy (1960)
590	St. Columbanus leaves Ireland and sails to Gaul			Henderson (1987), Cahill (1995)
596	Pope Gregory I (the Great) sends monks (St. Augustine) from Rome to preach Christianity in pagan Anglo-Saxon England			Henderson (1987), Alexander (1978)
597	Pope Gregory I's mission (St. Augustine) arrives in Kent (Canterbury royal seat of Kent)	St. Columba dies		Henderson (1987), Stalley (2008), Brown (2003), Cahill (1995)
597	Led by St. Augustine, the monks arrive and meet with the Anglo-Saxon King Aethelbert in Thanet.			Henderson (1987)

Date	Event	People	MS	Source
<b>7th century</b>				
601	St. Paulinus arrives in Northumbria			Backhouse (1981)
615		St. Columbanus dies		Henderson (1987), Cahill (1995)
616	Aethelbert dies; Aethelfrith killed by Redwald			Henderson (1987)
617	Beginning of Edwin's reign			Brown (200)
624	Redwald dies			Henderson (1987)
625	Paulinus comes north as chaplain to Princess Ethelberga of Kent (also Aethelberg), bride of King Edwin (Deira)			Backhouse (1981), Brown (2003)
626-27	King Edwin baptised by Paulinus			Brown (2003)
630-631	Sigbert becomes King of the East Angles		Cathach of Columcille (Dublin, RIA)	Henderson (1987); MS reference from Brown/Lovett (1999)
632	Edwin dies			Henderson (1987), Brown (2003)
633	End of Edwin's reign			Brown (2003)
633	Edwin killed, Paulinus and Ethelberga return to Kent			Backhouse (1981)
634		St. Cuthbert born		Stalley (2008)
634	Oswald returns to Northumbria			da Paor (1958)
634	Oswald (Bernicia) defeats Cadwalla; introduction of Columba tradition			Brown (2003)
635	St. Aidan (from Iona) founds monastery at Lindisfarne (Holy Island); succeeded Cormac who did not have success in the region			Alexander (1978), Henry (1974), Backhouse (1981), Brown (2003), Cahill (1995), de Paor (1958)
635	King Oswald (Bernicia) sends to Iona for priests			Backhouse (1981)
641	Oswald (Bernicia) killed in battle with Penda of Mercia, succeeded by his brother Oswy			Brown (2003)
650	Fursey dies			Henderson (1987)
651	St. Cuthbert enters monastery at Melrose	St. Aidan dies		Backhouse (1981)
651	Bishop Finan succeeds Aidan at Lindisfarne			
655	Penda killed, Oswy makes donation of land to LF			

Date	Event	People	MS	Source
660s			BOD?	
	664 Synod at Whitby			Henderson (1987), Brown (2003), Cahill (1995), da Paor (1958)
	664 St. Cuthbert arrives in LF			Brown (2003)
	667 Archbishop Theodore from Tarsus arrives in Canterbury along w/Hadrian			Brown (2003)
670s	669 Theodore, successor to Augustine, arrives in England			Backhouse (1981), da Paor
	Wilfrid presents purple book to Ripon			Brown (2003), Backhouse (1981)
	674 Monastery of Saint Peter founded at Wearmouth by Benedict Biscop			Backhouse (1981)
	679 Council of Hatfield			Brown (2003)
	681 Monastery of Saint Paul founded at Jarrow by Ceolfrith			Backhouse (1981)
	681 Jarrow founded by Biscop			Brown (2003)
	684 Cuthbert elected as bishop			
	685 Cuthbert became Bishop of Lindisfarne			Brown (2003)
	685 Ecgrith dies, Aldfrith rules			Brown (2003), Henderson (1987)
	687	St. Cuthbert dies		Stalley (2008), Backhouse (1981), Brown (2003)
	690 Willibrord goes to Frisia			Backhouse (1981)
	695 Willibrord goes to Rome to be consecrated archbishop of Utrecht			Backhouse (1981)
	698 Eadfrith (scribe of LG) becomes bishop of Lindisfarne		LG?, EG?	Brown (2003)
	698 Cuthbert's grave was opened, translation of St. Cuthbert			Backhouse (1981), Brown (2003)
	698 Bishop Eadfrith ordered Cuthbert's relics moved			Brown (2003)
	698 Willibrord establishes Echternach			Backhouse (1981)

Date	Event	People	MS	Source
<b>8th century</b>				
704		Adamnan dies		Dunleavy (1960)
705	End of Aldfrith's rule			Brown (2003), Henderson (1987)
705	First. Life of St. Cuthbert written by an anonymous monk			
709		St. Wilfrid dies?		Backhouse (1981)
710		St. Wilfrid dies		
715	Iona converted to Roman Easter			Brown (2003)
716	Ceolfrith leaves for Rome			Brown/Lovett (1999)
721	Eadfrith dies			Brown (2003)
721	Aethilwald (bound the LG) succeeds Eadfrith			Brown (2003)
721	Bede completes the prose version of the Life of Cuthbert			Brown (2003)
730			Vespasian Psalter	Brown/Lovett (1999)
731	Bede finishes HE			Brown (2003)
735		Bede dies		Backhouse (1981)
739	Willibrord dies, buried at Echternach			Backhouse (1981)
740	Aethilwald dies			Brown (2003)
750			BOK?	Brown (2003)
755		Boniface killed		Brown (1980)
793	Lindisfarne attacked by Vikings			Backhouse (1981), Cahill (1995), Brown (2003)
<b>9th century</b>				
800	Charlemagne crowned Christian emperor by Pope Leo III			Brown (1980)
802-806	Vikings plunder Iona			Stalley (2008)
804	Kells rebuilt after a fire			Simms (1961)
806-813	Abbot of Iona took refuge at Kells			Simms (1961)
875	Monks abandon Lindisfarne for the last time			Cahill (1995)

Date	Event	People	MS	Source
<b>10th century</b>				
950-960	Aldred glosses the LG and adds a colophon			Brown (2003)
<b>11th century</b>				
1006	Gospel of Colum Cille was stolen and recovered two months later but stripped of gold			Simms (1961), Sullivan (1927)
11th C	seven charters written in the Irish language concerning property granted to the Abbey of Kells			Simms (1961)
<b>12th century</b>				
1104	St. Cuthbert's relics moved to Durham Cathedral			Backhouse (1981)
<b>16th century</b>				
1539	Monastery at Kells surrendered to the Crown			Sullivan (1927), Dunleavy (1960)
1546	Vulgate become authoritative text of the Latin Bible at the Council of Trent			Brown (1980)
<b>17th century</b>				
1621	James Ussher –bishop elect of Meath inspected the book and counted its leaves (334V)			Simms (1961), Sullivan (1927), Henry (1974)
1621	Sir Robert Cotton dies			Brown (2003)
1654	Cromwellian cavalry housed in the church of Kells, BOK sent to Dublin for safekeeping			Henry (1974)
1661	Book of Kells presented to Trinity College by Henry Jones, former bishop of Clogher, scoutmaster of Cromwell's army, and at the Restoration, became bishop of Meath, also gave Book of Durrow to Trinity College			Henry (1974)
<b>18th century</b>				
1731	Lindisfarne Gospels saved from fire at Ashburnham House			Backhouse (1981)
1753	Lindisfarne Gospels donated to the British Museum			Brown (2003)



## **Appendix B**

### **Example of Quire 2**

Appendix B is a supplemental file in PDF format. Four of the pages are set up to be printed double sided on 11" x 17" paper. One page is set up to be printed on 8" x 11" paper. When printed out correctly and folded, one can see how quire 2 was assembled.

## Appendix C

### Diagram of the Layout of the Book of Kells

The following pages contain a diagram of the Book of Kells in a readers spread. Notations were made from various references and upon examination of the CD-ROM of the Book of Kells (Trinity College Library Dublin. The Book of Kells. Dublin: X Communications, 2004), and the facsimile of the Book of Kells located at the Special Collections and Archives at UC Santa Cruz (The Book of Kells. Fine Art Facsimile Volume, Lucerne: Faksimile Verlag Luzern, 1990).

#### Legend of notations

A	Hand A
AR	<i>Argumentum</i>
B	Hand B
BC	<i>Breve causae</i>
BL	Blue
C	Hand C
Circled number	Number of lines of text
CL	Colored letters
CT	Canon table
ED	Elaborately decorated
EP	Evangelist page
F or Flesh	Flesh side of the vellum
GR	Green
Hair	Hair side of the vellum
MD	Moderately decorated
NVE	Not very elaborate
P	Purple
R	Recto
RD	Red
SD	Slightly decorated
SED	Slightly elaborately decorated
TIP	Turn in the path
V	Verso
Y	Yellow

Figure C-1 provides an example of a readers spread with an explanation of some of the notations made on the spreads.

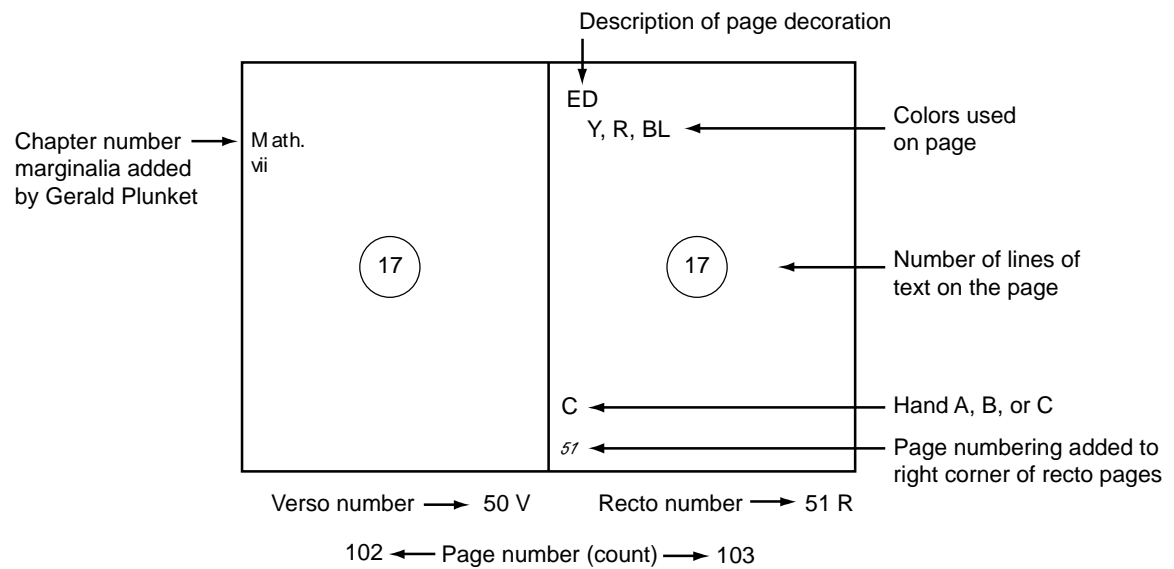
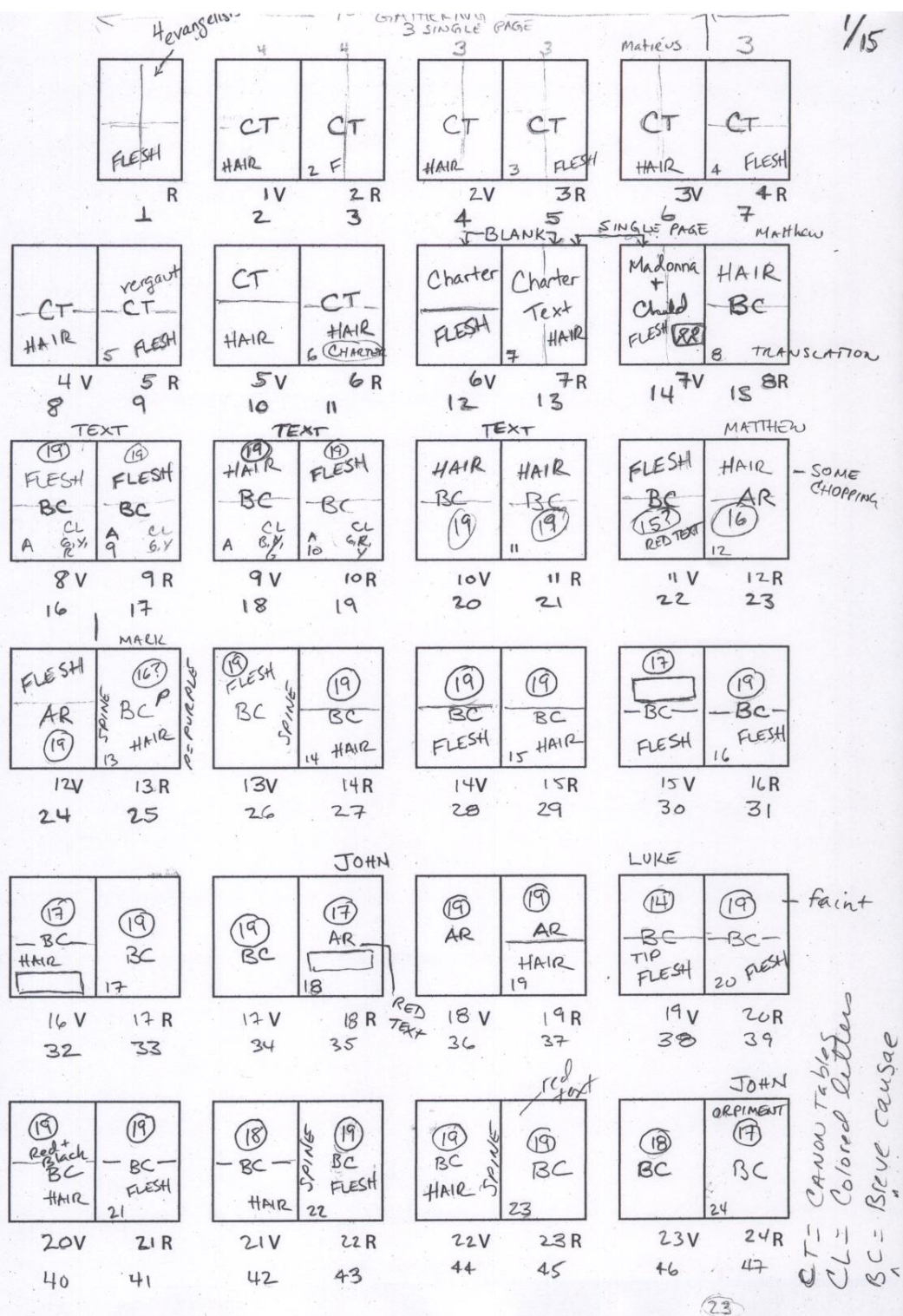


Figure C-1. An example of a page spread with an explanation of notations.



Matthew 29-129

<p>red + black text</p> <div> <div>(18) BL</div> <div>(18) BL</div> </div> <div>25</div>	<div> <div>(19) BL</div> <div>2 COLUMNS (NAMES)</div> </div> <div>26</div>	<div> <div>2 COLUMNS (NAMES)</div> <div>(chart of text?) BLANK</div> </div> <div>27</div>	<p>4 EVANGELIST</p> <p>3pm 2/15</p> <p>is visible</p> <div> <div>EP</div> <div>BLANK</div> </div> <div>28</div>				
24 V 48	25 R 49	26 V 52	27 R 53	28 V 54	28 R 55		
Beg. of Matthew no decoration							
<p>Portrait of Matthew</p> <div> <div>29</div> <div>TEN CHART</div> </div>	<div> <div>2 COLUMNS</div> <div>Genealogy of Christ</div> <div>30</div> </div>	<div> <div>2 COLUMNS</div> <div>Christ Geneal.</div> <div>31</div> </div>	<div> <div>1 COL</div> <div>End of Christ Geneal.</div> <div>32</div> </div>	<div> <div>29 V 58</div> <div>30 R 59</div> </div>	<div> <div>30 V 60</div> <div>31 R 61</div> </div>	<div> <div>31 V 62</div> <div>32 R 63</div> </div>	
28 V 56	29 R 57	29 V 58	30 R 59	30 V 60	31 R 61	31 V 62	32 R 63
<p>Portrait of Christ</p> <p>Carpet page</p> <p>8-CIRCLE CROSS</p> <p>33 PAGE</p>	<p>BLANK</p> <div> <div>34</div> </div>	<div> <div>(17)</div> <div>NO G.D.</div> <div>RED</div> <div>YELLOW</div> <div>DIAMOND</div> <div>B?</div> <div>35</div> </div>	<div> <div>(17)</div> <div>ED</div> <div>GREEN</div> <div>Y, BL</div> <div>C?</div> </div> <div> <div>(17)</div> <div>NO ED</div> <div>GR, Y, RD</div> <div>GUIDELINES</div> <div>C?</div> <div>36</div> </div>	<div> <div>33 V 66</div> <div>34 R 67</div> </div>	<div> <div>34 V 68</div> <div>35 R 69</div> </div>	<div> <div>35 V 70</div> <div>36 R 71</div> </div>	
32 V 64	33 R 65	33 V 66	34 R 67	34 V 68	35 R 69	35 V 70	36 R 71
<div> <div>(17)</div> <div>Some ED</div> <div>Y, R, GR</div> <div>B?</div> <div>C?</div> <div>36*</div> </div>	<div> <div>(17)</div> <div>ED</div> <div>GR, Y, R</div> <div>B?</div> <div>C?</div> <div>36*</div> </div>	<div> <div>(17)</div> <div>SED</div> <div>GR, RD, Y</div> <div>C?</div> <div>37</div> </div>	<div> <div>(17)</div> <div>ED</div> <div>YELLOW</div> <div>RED</div> <div>NO GREEN</div> <div>C?</div> <div>38</div> </div>	<div> <div>36 V 74</div> <div>37 R 75</div> </div>	<div> <div>37 V 76</div> <div>38 R 77</div> </div>	<div> <div>38 V 78</div> <div>39 R 79</div> </div>	
36 V 72	36 R 73	36 V 74	37 R 75	37 V 76	38 R 77	38 V 78	39 R 79
<div> <div>(17)</div> <div>ED</div> <div>Y, RD</div> <div>NO GREEN</div> <div>40</div> </div>	<div> <div>(17)</div> <div>SED</div> <div>TIP?</div> <div>RD, Y</div> <div>NO GREEN</div> <div>40</div> </div>	<div> <div>(17)</div> <div>ED</div> <div>GR, Y, RD</div> <div>C?</div> <div>41</div> </div>	<div> <div>(17)</div> <div>ED</div> <div>BL, RD, Y</div> <div>C?</div> <div>42</div> </div>	<div> <div>40 V 82</div> <div>41 R 83</div> </div>	<div> <div>41 V 84</div> <div>42 R 85</div> </div>	<div> <div>42 V 86</div> <div>43 R 87</div> </div>	
39 V 80	40 R 81	40 V 82	41 R 83	41 V 84	42 R 85	42 V 86	43 R 87
<div> <div>(17)</div> <div>ED</div> <div>BL, RD, Y</div> <div>GR</div> <div>C?</div> <div>44</div> </div>	<div> <div>(17)</div> <div>ED</div> <div>BL, Y</div> <div>C?</div> <div>45</div> </div>	<div> <div>(17)</div> <div>ED</div> <div>BL, Y</div> <div>C?</div> <div>46</div> </div>	<div> <div>(17)</div> <div>ED</div> <div>RD, Y, BL</div> <div>C?</div> <div>47</div> </div>	<div> <div>43 V 88</div> <div>44 R 89</div> </div>	<div> <div>44 V 90</div> <div>45 R 91</div> </div>	<div> <div>45 V 92</div> <div>46 R 93</div> </div>	
43 V 88	44 R 89	44 V 90	45 R 91	45 V 92	46 R 93	46 V 94	47 R 95

24 pages

148 per page

35

TIP = Turn in 12 page

ED = elaborate decoration

A = HAND A

B = HAND B

C = HAND C



3/15

Matthew 29-129

<div> <div> <div>(17)</div> <div>ED</div> <div>Y, RD, BL</div> <div>C?</div> </div> <div> <div>ATL</div> <div>VII</div> </div> </div> <div> <div>47 V</div> <div>96</div> </div>	<div> <div> <div>(17)</div> <div>ED</div> <div>BL, GR, RD, Y</div> <div>TIP</div> <div>C?</div> </div> <div> <div>48 R</div> <div>97</div> </div> </div>
<div> <div> <div>(17)</div> <div>ED</div> <div>Y, RD, BL</div> <div>C?</div> </div> <div> <div>48 V</div> <div>98</div> </div> </div>	<div> <div> <div>(17)</div> <div>ED</div> <div>Y, RD</div> <div>C?</div> </div> <div> <div>49 R</div> <div>99</div> </div> </div>
<div> <div> <div>(17)</div> <div>NVE</div> <div>RD, Y</div> <div>C</div> </div> <div> <div>49 V</div> <div>100</div> </div> </div>	<div> <div> <div>(17)</div> <div>SD</div> <div>BL, GR</div> <div>C?</div> <div>SD</div> </div> <div> <div>50 R</div> <div>101</div> </div> </div>
<div> <div> <div>(17)</div> <div>ED</div> <div>Y, RD, BL</div> <div>C?</div> </div> <div> <div>50 V</div> <div>102</div> </div> </div>	<div> <div> <div>(17)</div> <div>ED</div> <div>Y, RD, BL</div> <div>C</div> </div> <div> <div>51 R</div> <div>103</div> </div> </div>
<div> <div> <div>(17)</div> <div>ED</div> <div>Y, RD, BL</div> <div>C?</div> </div> <div> <div>51 V</div> <div>104</div> </div> </div>	<div> <div> <div>(17)</div> <div>SD</div> <div>BL, Y</div> <div>C?</div> <div>52</div> </div> <div> <div>52 R</div> <div>105</div> </div> </div>
<div> <div> <div>(17)</div> <div>SD</div> <div>Y, GR, RD</div> <div>THX</div> <div>C?</div> </div> <div> <div>52 V</div> <div>106</div> </div> </div>	<div> <div> <div>(17)</div> <div>SD</div> <div>Y, RD, GR</div> <div>C?</div> <div>53</div> </div> <div> <div>53 R</div> <div>107</div> </div> </div>
<div> <div> <div>(17)</div> <div>ED</div> <div>Y, GR, RD</div> <div>C?</div> </div> <div> <div>53 V</div> <div>108</div> </div> </div>	<div> <div> <div>(17)</div> <div>ED</div> <div>BL, Y, RD</div> <div>C?</div> <div>54</div> </div> <div> <div>54 R</div> <div>109</div> </div> </div>
<div> <div> <div>(17)</div> <div>SD</div> <div>GR, RD, BL, Y</div> <div>C?</div> </div> <div> <div>54 V</div> <div>110</div> </div> </div>	<div> <div> <div>(17)</div> <div>ED</div> <div>BL, GR, Y</div> <div>C?</div> <div>55</div> </div> <div> <div>55 R</div> <div>111</div> </div> </div>
<div> <div> <div>(17)</div> <div>ED</div> <div>BL, Y, GR</div> <div>ATHX</div> <div>C?</div> </div> <div> <div>55 V</div> <div>112</div> </div> </div>	<div> <div> <div>(17)</div> <div>ED</div> <div>Y, GR, RD</div> <div>C?</div> <div>56</div> </div> <div> <div>56 R</div> <div>113</div> </div> </div>
<div> <div> <div>(17)</div> <div>ED</div> <div>Y, BL, GR</div> <div>C?</div> </div> <div> <div>56 V</div> <div>114</div> </div> </div>	<div> <div> <div>(17)</div> <div>ED</div> <div>Y, RD, BL</div> <div>C?</div> <div>57</div> </div> <div> <div>57 R</div> <div>115</div> </div> </div>
<div> <div> <div>(17)</div> <div>ED</div> <div>Y, RD, GR</div> <div>C?</div> </div> <div> <div>57 V</div> <div>116</div> </div> </div>	<div> <div> <div>(17)</div> <div>ED</div> <div>GR, Y, RD</div> <div>C?</div> <div>58</div> </div> <div> <div>58 R</div> <div>117</div> </div> </div>
<div> <div> <div>(17)</div> <div>ED</div> <div>Y, GR, BL</div> <div>C?</div> </div> <div> <div>58 V</div> <div>118</div> </div> </div>	<div> <div> <div>(17)</div> <div>ED</div> <div>GR, Y, BL</div> <div>C?</div> <div>59</div> </div> <div> <div>59 R</div> <div>119</div> </div> </div>
<div> <div> <div>(17)</div> <div>SD</div> <div>Y, RD</div> <div>C?</div> </div> <div> <div>59 V</div> <div>120</div> </div> </div>	<div> <div> <div>(17)</div> <div>ED</div> <div>B, GR, Y, RD</div> <div>C?</div> <div>60</div> </div> <div> <div>60 R</div> <div>121</div> </div> </div>
<div> <div> <div>(17)</div> <div>SD</div> <div>BL, GR, RD</div> <div>C?</div> </div> <div> <div>60 V</div> <div>122</div> </div> </div>	<div> <div> <div>(17)</div> <div>ED</div> <div>G, BL, Y, R</div> <div>TIP?</div> <div>61</div> </div> <div> <div>61 R</div> <div>123</div> </div> </div>
<div> <div> <div>(17)</div> <div>SD</div> <div>Y, RD, GR</div> <div>C?</div> </div> <div> <div>61 V</div> <div>124</div> </div> </div>	<div> <div> <div>(17)</div> <div>SD</div> <div>BL, GR, Y</div> <div>C?</div> <div>62</div> </div> <div> <div>62 R</div> <div>125</div> </div> </div>
<div> <div> <div>(17)</div> <div>ED</div> <div>GR, BL</div> <div>C?</div> </div> <div> <div>62 V</div> <div>126</div> </div> </div>	<div> <div> <div>(17)</div> <div>ED</div> <div>BL, GR</div> <div>C?</div> <div>63</div> </div> <div> <div>63 R</div> <div>127</div> </div> </div>
<div> <div> <div>(17)</div> <div>MD</div> <div>BL, GR</div> <div>C?</div> </div> <div> <div>63 V</div> <div>128</div> </div> </div>	<div> <div> <div>(17)</div> <div>ED</div> <div>BL, GR, Y</div> <div>C?</div> <div>64</div> </div> <div> <div>64 R</div> <div>129</div> </div> </div>
<div> <div> <div>(17)</div> <div>ED</div> <div>BL, GR, RD</div> <div>TIP?</div> <div>C?</div> </div> <div> <div>64 V</div> <div>130</div> </div> </div>	<div> <div> <div>(17)</div> <div>SD</div> <div>BL, GR</div> <div>C?</div> <div>65</div> </div> <div> <div>65 R</div> <div>131</div> </div> </div>
<div> <div> <div>(17)</div> <div>ED</div> <div>BL, Y, GR</div> <div>C?</div> </div> <div> <div>65 V</div> <div>132</div> </div> </div>	<div> <div> <div>(17)</div> <div>ED</div> <div>BL, GR, RD</div> <div>TIP</div> <div>66</div> </div> <div> <div>66 R</div> <div>133</div> </div> </div>
<div> <div> <div>(17)</div> <div>SD</div> <div>BL, GR</div> <div>C?</div> </div> <div> <div>66 V</div> <div>134</div> </div> </div>	<div> <div> <div>(17)</div> <div>ED</div> <div>GR, BL</div> <div>C?</div> <div>67</div> </div> <div> <div>67 R</div> <div>135</div> </div> </div>
<div> <div> <div>(17)</div> <div>SD</div> <div>BL, GR</div> <div>C?</div> </div> <div> <div>67 V</div> <div>136</div> </div> </div>	<div> <div> <div>(17)</div> <div>SED</div> <div>BL, GR, RD</div> <div>C?</div> <div>68</div> </div> <div> <div>68 R</div> <div>137</div> </div> </div>
<div> <div> <div>(17)</div> <div>ED</div> <div>G, BL, RD</div> <div>C?</div> </div> <div> <div>68 V</div> <div>138</div> </div> </div>	<div> <div> <div>(17)</div> <div>SD</div> <div>BL, GR</div> <div>C?</div> <div>69</div> </div> <div> <div>69 R</div> <div>139</div> </div> </div>
<div> <div> <div>(17)</div> <div>SD</div> <div>BL, RD, GR</div> <div>C?</div> </div> <div> <div>69 V</div> <div>140</div> </div> </div>	<div> <div> <div>(17)</div> <div>SED</div> <div>BL, RD, Y</div> <div>C?</div> <div>70</div> </div> <div> <div>70 R</div> <div>141</div> </div> </div>
<div> <div> <div>(17)</div> <div>ED</div> <div>BL, RD, Y</div> <div>C?</div> </div> <div> <div>70 V</div> <div>142</div> </div> </div>	<div> <div> <div>(17)</div> <div>SD</div> <div>BL, GR</div> <div>C?</div> <div>71</div> </div> <div> <div>71 R</div> <div>143</div> </div> </div>

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<div> <div>(17)</div> <div>ED BL, GR, Y, RD C?</div> </div> <div> <div>(17)</div> <div>ED Y, BL, GR, RD C?</div> </div>	<div> <div>(17)</div> <div>ED Y, BL, RD TIP C?</div> </div> <div> <div>(17)</div> <div>ED Y, BL, RD C?</div> </div>	<div> <div>(17)</div> <div>SD GR, RD, Y C?</div> </div> <div> <div>(17)</div> <div>ED BL, Y, GR, RD C?</div> </div>	<div> <div>(17)</div> <div>ED BL, Y, GR, RD C?</div> </div> <div> <div>(17)</div> <div>ED RD, BL, Y C?</div> </div>
71 V 72 R 144 145	72 V 73 R 146 147	73 V 74 R 148 149	74 V 75 R 150 151
<div> <div>(17)</div> <div>SD GR, BL, Y C</div> </div> <div> <div>(17)</div> <div>SD GR, Y, BL C</div> </div>	<div> <div>(17)</div> <div>ED BL, GR, RD, Y TIP C</div> </div> <div> <div>(17)</div> <div>SD BL, Y, RD, GR C</div> </div>	<div> <div>(17)</div> <div>ED GR, BL, RD C</div> </div> <div> <div>(17)</div> <div>ED BL, GR C</div> </div>	<div> <div>(17)</div> <div>SD BL, GR, Y C</div> </div> <div> <div>(17)</div> <div>ED BL, GR, Y C</div> </div>
75 V 76 R 152 153	76 V 77 R 154 155	77 V 78 R 156 157	78 V 79 R 158 159
<div> <div>(17)</div> <div>ED BL, GR, Y C</div> </div> <div> <div>(17)</div> <div>SD Y, BL, GR, RD C</div> </div>	<div> <div>(17)</div> <div>ED BL, Y, GR C</div> </div> <div> <div>(17)</div> <div>ED Y, BL, RD, GR C</div> </div>	<div> <div>(17)</div> <div>ED BL, GR, Y C</div> </div> <div> <div>(17)</div> <div>ED Y, GR, BL C</div> </div>	<div> <div>(17)</div> <div>ED BL, Y, GR, RD C</div> </div> <div> <div>(17)</div> <div>ED BL, Y, GR C</div> </div>
79 V 80 R 160 161	80 V 81 R 162 163	81 V 82 R 164 165	82 V 83 R 166 167
<div> <div>(17)</div> <div>ED GR, BL, Y C</div> </div> <div> <div>(17)</div> <div>SD BL, GR C</div> </div>	<div> <div>(17)</div> <div>ED GR, BL, Y C</div> </div> <div> <div>(17)</div> <div>SD BL, Y, GR C</div> </div>	<div> <div>(17)</div> <div>SD BL, GR, Y C</div> </div> <div> <div>(17)</div> <div>SD BL, GR, Y C</div> </div>	<div> <div>(17)</div> <div>ED BL, GR, Y C</div> </div> <div> <div>(17)</div> <div>ED BL, GR, Y C</div> </div>
83 V 84 R 168 169	84 V 85 R 170 171	85 V 86 R 172 173	86 V 87 R 174 175
<div> <div>(17)</div> <div>ED BL, GR, Y C</div> </div> <div> <div>(17)</div> <div>ED Y, GR, BL C</div> </div>	<div> <div>(17)</div> <div>ED Y, RD, GR C</div> </div> <div> <div>(17)</div> <div>ED Y, GR, RD man or animal C</div> </div>	<div> <div>(17)</div> <div>ED Y, RD, GR C</div> </div> <div> <div>(17)</div> <div>ED GR, BL, Y C</div> </div>	<div> <div>(17)</div> <div>ED GR, BL, Y C</div> </div> <div> <div>(17)</div> <div>ED GR, BL, Y C</div> </div>
87 V 88 R 176 177	88 V 89 R 178 179	89 V 90 R 180 181	90 V 91 R 182 183
<div> <div>(17)</div> <div>ED GR, BL, RD Y C</div> </div> <div> <div>(17)</div> <div>ED Y, GR, BL C</div> </div>	<div> <div>(17)</div> <div>ED BL, GR, Y C</div> </div> <div> <div>(17)</div> <div>ED Y, GR, BL C</div> </div>	<div> <div>(17)</div> <div>SD Y, BL, GR C</div> </div> <div> <div>(17)</div> <div>SD, C BL, Y, GR C</div> </div>	<div> <div>(17)</div> <div>ED BL, Y, GR C</div> </div> <div> <div>(17)</div> <div>ED Y, RD, BL C</div> </div>
91 V 92 R 184 185	92 V 93 R 186 187	93 V 94 R 188 189	94 V 95 R 190 191

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<div> <div>17</div> <div>17</div> <div>96</div> </div> <div> <div>95 V</div> <div>96 R</div> <div>192</div> <div>193</div> </div>	<div> <div>17</div> <div>15</div> <div>97</div> </div> <div> <div>96 V</div> <div>97 R</div> <div>194</div> <div>195</div> </div>	<div> <div>16</div> <div>17</div> <div>98</div> </div> <div> <div>97 V</div> <div>98 R</div> <div>196</div> <div>197 (99)</div> </div>	<div> <div>17</div> <div>17</div> <div>99</div> </div> <div> <div>98 V</div> <div>99 R*</div> <div>198</div> <div>199 (100)</div> </div>
<div> <div>17</div> <div>17</div> <div>100</div> </div> <div> <div>99 V</div> <div>100 R</div> <div>200</div> <div>201</div> </div>	<div> <div>17</div> <div>17</div> <div>101</div> </div> <div> <div>100 V</div> <div>101 R</div> <div>202</div> <div>203</div> </div>	<div> <div>17</div> <div>17</div> <div>102</div> </div> <div> <div>101 V</div> <div>102 R</div> <div>204</div> <div>205</div> </div>	<div> <div>17</div> <div>17</div> <div>103</div> </div> <div> <div>102 V</div> <div>103 R</div> <div>206</div> <div>207</div> </div>
<div> <div>17</div> <div>17</div> <div>104</div> </div> <div> <div>103 V</div> <div>104 R</div> <div>208</div> <div>209</div> </div>	<div> <div>17</div> <div>17</div> <div>105</div> </div> <div> <div>104 V</div> <div>105 R</div> <div>210</div> <div>211</div> </div>	<div> <div>17</div> <div>17</div> <div>106</div> </div> <div> <div>105 V</div> <div>106 R</div> <div>212</div> <div>213</div> </div>	<div> <div>17</div> <div>17</div> <div>107</div> </div> <div> <div>106 V</div> <div>107 R</div> <div>214</div> <div>215</div> </div>
<div> <div>17</div> <div>17</div> <div>108</div> </div> <div> <div>107 V</div> <div>108 R</div> <div>216</div> <div>217</div> </div>	<div> <div>17</div> <div>17</div> <div>109</div> </div> <div> <div>108 V</div> <div>109 R</div> <div>218</div> <div>219</div> </div>	<div> <div>17</div> <div>17</div> <div>110</div> </div> <div> <div>109 V</div> <div>110 R</div> <div>220</div> <div>221</div> </div>	<div> <div>17</div> <div>17</div> <div>111</div> </div> <div> <div>110 V</div> <div>111 R</div> <div>222</div> <div>223</div> </div>
<div> <div>17</div> <div>17</div> <div>112</div> </div> <div> <div>111 V</div> <div>112 R</div> <div>224</div> <div>225</div> </div>	<div> <div>17</div> <div>17</div> <div>113</div> </div> <div> <div>112 V</div> <div>113 R</div> <div>226</div> <div>227</div> </div>	<div> <div>17</div> <div>17</div> <div>114</div> </div> <div> <div>113 V</div> <div>114 R</div> <div>228</div> <div>229</div> </div>	<div> <div>17</div> <div>17</div> <div>115</div> </div> <div> <div>114 V</div> <div>115 R</div> <div>230</div> <div>231</div> </div>
<div> <div>17</div> <div>17</div> <div>116</div> </div> <div> <div>115 V</div> <div>116 R</div> <div>232</div> <div>233</div> </div>	<div> <div>17</div> <div>17</div> <div>117</div> </div> <div> <div>116 V</div> <div>117 R</div> <div>234</div> <div>235</div> </div>	<div> <div>17</div> <div>17</div> <div>118</div> </div> <div> <div>117 V</div> <div>118 R</div> <div>236</div> <div>237</div> </div>	<div> <div>17</div> <div>17</div> <div>119</div> </div> <div> <div>118 V</div> <div>119 R</div> <div>238</div> <div>239</div> </div>

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<div> <div>17</div> <div>120</div> </div> <div> 119 V 120 R 240 241 </div>	<div> <div>17</div> <div>121</div> </div> <div> 120 V 121 R 242 243 </div>	<div> <div>17</div> <div>122</div> </div> <div> 121 V 122 R 244 245 </div>	<div> <div>17</div> <div>123</div> </div> <div> 122 V 123 R 246 247 </div>
<div> <div>BLANK</div> <div>CHRIST IS CRUCIFIED TUNC CRUCIFIXUS</div> <div>124</div> </div> <div> 123 V 124 R 248 249 </div>	<div> <div>17</div> <div>125</div> </div> <div> 124 V 125 R 250 251 </div>	<div> <div>17</div> <div>126</div> </div> <div> 125 V 126 R 252 253 </div>	<div> <div>17</div> <div>127</div> </div> <div> 126 V 127 R 254 255 </div>
<div> <div>15</div> <div>B?</div> <div>128</div> </div> <div> 127 V 128 R 256 257 </div>	<div> <div>17</div> <div>B</div> <div>ENDS here but hardly read</div> <div>129</div> </div> <div> 128 V 129 R 258 259 </div>	<div> <div>4</div> <div>EVANGELIOS</div> <div>BEG OF ST MARK</div> <div>Enitium</div> <div>130 V angit</div> </div> <div> 129 V 130 R 260 261 </div>	<div> <div>17</div> <div>131</div> </div> <div> 130 V 131 R 262 263 </div>
<div> <div>17</div> <div>132</div> </div> <div> 131 V 132 R 264 265 </div>	<div> <div>17</div> <div>133</div> </div> <div> 132 V 133 R 266 267 </div>	<div> <div>17</div> <div>134</div> </div> <div> 133 V 134 R 268 269 </div>	<div> <div>17</div> <div>135</div> </div> <div> 134 V 135 R 270 271 </div>
<div> <div>17</div> <div>136</div> </div> <div> 135 V 136 R 272 273 </div>	<div> <div>17</div> <div>137</div> </div> <div> 136 V 137 R 274 275 </div>	<div> <div>17</div> <div>138</div> </div> <div> 137 V 138 R 276 277 </div>	<div> <div>17</div> <div>139</div> </div> <div> 138 V 139 R 278 279 </div>
<div> <div>17</div> <div>140</div> </div> <div> 139 V 140 R 280 281 </div>	<div> <div>17</div> <div>141</div> </div> <div> 140 V 141 R 282 283 </div>	<div> <div>17</div> <div>142</div> </div> <div> 141 V 142 R 284 285 </div>	<div> <div>17</div> <div>143</div> </div> <div> 142 V 143 R 286 287 </div>

red dec  
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<div> <div>17</div> <div>17</div> <div>144</div> </div> <div> <div>143 V</div> <div>288</div> </div> <div> <div>144 R</div> <div>289</div> </div>	<div> <div>17</div> <div>17</div> <div>145</div> </div> <div> <div>144 V</div> <div>290</div> </div> <div> <div>145 R</div> <div>291</div> </div>	<div> <div>17</div> <div>17</div> <div>146</div> </div> <div> <div>145 V</div> <div>292</div> </div> <div> <div>146 R</div> <div>293</div> </div>	<div> <div>17</div> <div>17</div> <div>147</div> </div> <div> <div>146 V</div> <div>294</div> </div> <div> <div>147 R</div> <div>295</div> </div>
<div> <div>17</div> <div>17</div> <div>148</div> </div> <div> <div>147 V</div> <div>296</div> </div> <div> <div>148 R</div> <div>297</div> </div>	<div> <div>17</div> <div>17</div> <div>149</div> </div> <div> <div>148 V</div> <div>298</div> </div> <div> <div>149 R</div> <div>299</div> </div>	<div> <div>17</div> <div>17</div> <div>150</div> </div> <div> <div>149 V</div> <div>300</div> </div> <div> <div>150 R</div> <div>301</div> </div>	<div> <div>17</div> <div>17</div> <div>151</div> </div> <div> <div>150 V</div> <div>302</div> </div> <div> <div>151 R</div> <div>303</div> </div>
<div> <div>17</div> <div>17</div> <div>152</div> </div> <div> <div>151 V</div> <div>304</div> </div> <div> <div>152 R</div> <div>305</div> </div>	<div> <div>17</div> <div>17</div> <div>153</div> </div> <div> <div>152 V</div> <div>306</div> </div> <div> <div>153 R</div> <div>307</div> </div>	<div> <div>17</div> <div>17</div> <div>154</div> </div> <div> <div>153 V</div> <div>308</div> </div> <div> <div>154 R</div> <div>309</div> </div>	<div> <div>17</div> <div>17</div> <div>155</div> </div> <div> <div>154 V</div> <div>310</div> </div> <div> <div>155 R</div> <div>311</div> </div>
<div> <div>17</div> <div>17</div> <div>156</div> </div> <div> <div>155 V</div> <div>312</div> </div> <div> <div>156 R</div> <div>313</div> </div>	<div> <div>17</div> <div>17</div> <div>157</div> </div> <div> <div>156 V</div> <div>314</div> </div> <div> <div>157 R</div> <div>315</div> </div>	<div> <div>17</div> <div>17</div> <div>158</div> </div> <div> <div>157 V</div> <div>316</div> </div> <div> <div>158 R</div> <div>317</div> </div>	<div> <div>17</div> <div>17</div> <div>159</div> </div> <div> <div>158 V</div> <div>318</div> </div> <div> <div>159 R</div> <div>319</div> </div>
<div> <div>17</div> <div>17</div> <div>160</div> </div> <div> <div>159 V</div> <div>320</div> </div> <div> <div>160 R</div> <div>321</div> </div>	<div> <div>17</div> <div>17</div> <div>161</div> </div> <div> <div>160 V</div> <div>322</div> </div> <div> <div>161 R</div> <div>323</div> </div>	<div> <div>17</div> <div>17</div> <div>162</div> </div> <div> <div>161 V</div> <div>324</div> </div> <div> <div>162 R</div> <div>325</div> </div>	<div> <div>17</div> <div>17</div> <div>163</div> </div> <div> <div>162 V</div> <div>326</div> </div> <div> <div>163 R</div> <div>327</div> </div>
<div> <div>17</div> <div>17</div> <div>164</div> </div> <div> <div>163 V</div> <div>328</div> </div> <div> <div>164 R</div> <div>329</div> </div>	<div> <div>17</div> <div>17</div> <div>165</div> </div> <div> <div>164 V</div> <div>330</div> </div> <div> <div>165 R</div> <div>331</div> </div>	<div> <div>17</div> <div>17</div> <div>166</div> </div> <div> <div>165 V</div> <div>332</div> </div> <div> <div>166 R</div> <div>333</div> </div>	<div> <div>17</div> <div>17</div> <div>167</div> </div> <div> <div>166 V</div> <div>334</div> </div> <div> <div>167 R</div> <div>335</div> </div>

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<div> <div>17</div> <div>17</div> <div>168</div> </div> <div> <div>167 V</div> <div>168 R</div> <div>336</div> <div>337</div> </div>	<div> <div>17</div> <div>17</div> <div>169</div> </div> <div> <div>168 V</div> <div>169 R</div> <div>338</div> <div>339</div> </div>	<div> <div>17</div> <div>17</div> <div>170</div> </div> <div> <div>169 V</div> <div>170 R</div> <div>340</div> <div>341</div> </div>	<div> <div>17</div> <div>17</div> <div>171</div> </div> <div> <div>170 V</div> <div>171 R</div> <div>342</div> <div>343</div> </div>
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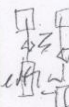
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Luke 188-290

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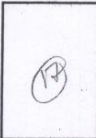



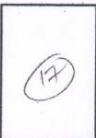

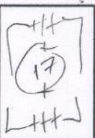

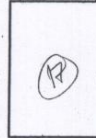
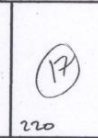
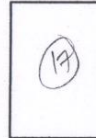
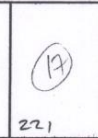
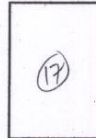
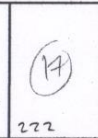
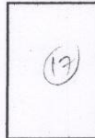
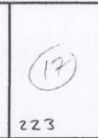
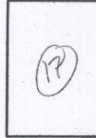
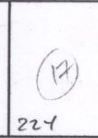
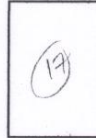
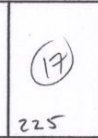
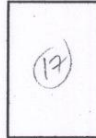
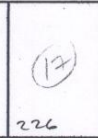
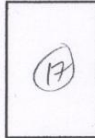
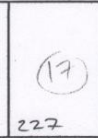
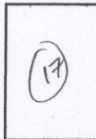
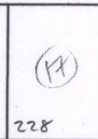
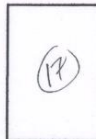
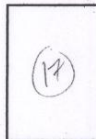
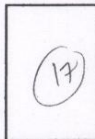
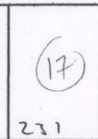
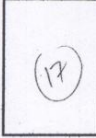
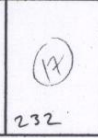
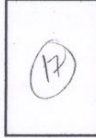
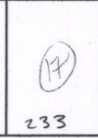
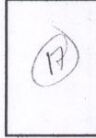
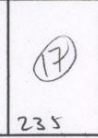
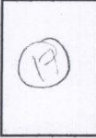
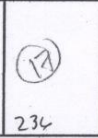

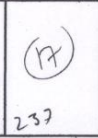
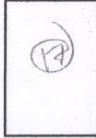
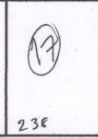
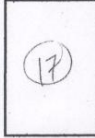
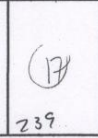
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vii

Luka 188-290

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 216 V 434	 217 R 435
 217 V 436	 218 R 437
 218 V 438	 219 R 439
 219 V 440	 220 R 441
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 233 V 468	 234 R 469
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 236 V 474	 237 R 475
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Luke 188-200

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Luke xv



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Luhe 188-290

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Board 4-5

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13/15

Blue, Y, R		END OF LUKE		RED INK			
(16)	(16)	B, R, Y (16)	(16)	BLANK Charters	EXP OF LUKE INS OF JOHN 290	EP (16)	BLANK 291
287V 576	288R 577	288V 578	289R 579	289V 580	290R 581	290V 582	291R 583
<i>Trimmed</i> <i>yellow brown white w/ say pen</i> <i>photo - dark</i> <i>stap pen</i>		Portrait of John 292?	(18)	(18)	(18)	(18)	(18)
291V 584	292R 585	292V 586	293R 587	293V 588	294R 589	294V 590	295R 591
(18)	(18)	(18)	(18)	(18)	(18)	(18)	(18)
295V 592	296R 593	296V 594	297R 595	297V 596	298R 597	298V 598	299R 599
(18)	(18)	(18)	(18)	(18)	(18)	(18)	(18)
299V 600	300R 601	300V 602	301R 603	301V 604	302R 605	302V 606	303R 607
(18)	(18)	(18)	(18)	(18)	(18)	(18)	(18)
303V 608	304R 609	304V 610	305R 611	305V 612	306R 613	306V 614	307R 615
<i>Insular Majuscule</i>		(18)	TIP (18)	(18)	(18)	(18)	(18)
307V 616	308R 617	308V 618	309R 619	309V 620	310R 621	310V 622	311R 623

Luke 188-290  
 John 291-339



<div> <div>18</div> <div>19</div> <div>312</div> </div> <div> <div>311 V</div> <div>624</div> </div> <div> <div>312 R</div> <div>625</div> </div>	<div> <div>19</div> <div>18</div> <div>313</div> </div> <div> <div>312 V</div> <div>626</div> </div> <div> <div>313 R</div> <div>627</div> </div>	<div> <div>18</div> <div>18</div> <div>314</div> </div> <div> <div>313 V</div> <div>628</div> </div> <div> <div>314 R</div> <div>629</div> </div>	<div> <div>18</div> <div>18</div> <div>315</div> </div> <div> <div>314 V</div> <div>630</div> </div> <div> <div>315 R</div> <div>631</div> </div>
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