Disembodied: Additional MS. 8785 and the Tradition of Human Organ Depictions in Medieval Art and Medicine

Taylor McCall

Introduction

Abstract and abject, a red mass floats within the negative space of the elegant curves of a gothic letter ‘C’. Cor: the letters spell out that this illuminated figure is no beast or musician, but instead the heart of the matter. Set within the fine lettering upon a clear, bold blue field, the human heart reveals itself to the inquisitive reader. This heart is among several organs painstakingly illustrated in British Library, Additional MS. 8785, a Mantuan translation of Bartholomaeus Anglicus’s *De proprietatibus rerum* (known in Italian as the *Trattato di scienza universal*) produced between 1299 and 1309.1 The manuscript’s illustration remains underexplored in general, and even less attention – nothing beyond a few brief mentions – has been paid to the inclusion of several rare depictions of organs and body parts in the decorated initials of Book Five (*On the Parts of the Body*), unique to this manuscript. This essay will begin by discussing the production of Add. MS. 8785, particularly focusing on the decoration, and will then situate the organ initial drawings within the larger context of the tradition of medieval depictions of human anatomy.

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The De proprietatibus rerum tradition has been well studied. The text was written by the Franciscan Bartholomaeus Anglicus (fl. 1220s-1270), also known as Bartholomew the Englishman, in several stages during the 1220s and 1230s while he studied and taught in Paris and Saxony. Bartholomaeus compiled an encyclopaedia of general knowledge of ‘things’, ranging from the planets and stars, to the human body, to animals and minerals, to the elements and the nature of God. Bartholomaeus divided his encyclopaedia into nineteen chapters and assiduously noted his sources in the margins where applicable; his most oft-cited medical authorities include Hippocrates, Aristotle, Galen, Avicenna and Constantine the African. The encyclopaedia was very popular and there are over two hundred manuscript copies extant in Latin and European vernacular languages.

Add. MS. 8785 offers readers a good deal of information on its production. The colophon and introduction at the start of the text indicates the volume was translated into the vernacular local to Mantua by Vivaldo Belcalzer (fl. 1270s-1309), a notary and councillor of the city, for Guido Bonacolsi, the signore of Mantua from 1299 until his death in January of 1309. The manuscript can therefore be securely dated to sometime between 1299 and 1308, during Guido’s tenure as signore, which is expressly stated in Vivaldo’s dedication: ‘Ding de los e d’onor al segnor so nobel e magnifich meser Gui dey bonacols Capitaniy e perpetual segnor de Mantoa […]’ (‘Given with praise and honour to the most noble and magnificent lord, Master Guido of the Bonacolsi, Captain and perpetual signore of Mantua […]’). Little is known of Vivaldo beyond what he includes in his dedication, but references to him appear in Mantuan records beginning in the late 1270s.

While the extent of Vivaldo’s hand in the production of the manuscript beyond his role as translator is unclear, he is prominently featured in one of the largest images in the book, a historiated initial at the start of the colophon (FIG. 1).

Inside the capital letter ‘D’ is a fairly typical dedicatory miniature, featuring Vivaldo presenting the book to Guido. The artist employs hierarchical perspective to reiterate the difference in station between Vivaldo, at left, and Guido, at right, a larger figure seated on a dais. Guido appears to be suitably appreciative to receive such an important gift; his right hand reaches towards the left side of his chest in gratitude as Vivaldo extends the book toward him. Although the image has sustained some damage, the richness of Guido’s dress is evident.

Another interesting piece in the dating of the manuscript is found within the pages now appended to the front of the book by later owners. In letters dating to 1745 and 1746, the Italian jurist, historian and antiquarian Giovanni Lami (1697-1770) claimed that he had seen this volume in the library of Marchese Niccolini. According to Lami, an ex libris inscription dated to 1320 (formerly on the inside cover, now lost presumably during the nineteenth-century rebinding), asserted that Guido Bonacolsi gave the manuscript to one Ugoccione de Lismanini of Padua. If this is to be believed,


3 The colophon reads in full: ‘Ding de los e d’onor al segnor so nobel e magnifich meser Gui deybonacols Capitaniy e perpetual segnor de Mantoa, e ay so fradey, nad e fioy de dolça aregordança meser Çoanin, el so Vivald de Belecalzer con recomendaxon si medexem et obediment viaz et intreg a tut ey so comandement’ (f. 13r).


5 Giovanni Lami, Novelle Letterarie di Firenze, vi, cols. 595-6, and vii, cols 285-8 (the relevant published pages were pasted into the front of the manuscripts and are numbered ff. 3v, 2-2v). Lami records the inscription as: ‘MCCCXX. Libro di mi Vguzon de Lismanini qu[ondam] Misser Arturo novel citadain de Padoa, e questo mi fo dona dal Magnifico Signor Misser Guido Bonacolsi perpetual Signor de Mantoa’.
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Fig. 1. Vivaldo Belcazer presenting the manuscript to Guido Bonacolsi. BL, Add. MS. 8785, f. 13r (details). Mantua, c. 1299-1308.
the manuscript must have been completed prior to Guido’s death in January of 1309, in enough time for Guido to then give to it Ugoccione.\footnote{6}

Add. MS. 8785 has the distinction of being among the earliest vernacular renditions of the \textit{De proprietatibus rerum}, translated only seventy or so years after the original was written. The Mantuan translation suggests the encyclopaedia was already popular enough to have been a desirable acquisition in the vernacular, rather than exclusively in Latin. Much has been written on the vernacular used by Vivaldo, especially his grammar, vocabulary and syntax, and the possible direct sources for his translation.\footnote{7} Add. MS. 8785 is not a faithful translation of Bartholomaeus’s original; rather, Vivaldo consolidated and cut much of the longer descriptive properties of each entry. Although it contains the first eighteen full books of the \textit{De proprietatibus rerum}, Add. MS. 8785 replaces the second half of Book Nineteen (\textit{On Colours, Odours, Tastes, Liquids, Measurements}, etc.) with a section entitled ‘\textit{mapa del mond}’ (ff. 315r-323r). This treatise has been identified as a translation of the first book of the \textit{De imagine mundi} of Honorius Augustodunensis.\footnote{8} Vivaldo makes no mention of the author, but is sure to carefully copy Bartholomaeus’s citations in the margins throughout the manuscript. The only other known copies of Vivaldo’s translation are Florence, Biblioteca Riccardiana, MS. 2155 (late fourteenth century) and Oxford, Bodleian Library, MSS. Canon ital. 24 (dated to 1446) and 131 (fifteenth century).\footnote{9}

Investigations into Add. MS. 8785 have largely focused on the production and especially the language of the manuscript, rather than its decorative programme.\footnote{10} However, as Heinz Meyer has pointed out, Add. MS. 8785 is unique among all other manuscript copies of the \textit{De proprietatibus rerum} for both the amount and consistency of decoration.\footnote{11} Nearly every initial at the start of each individual entry of the encyclopaedia includes a small scene or object relating to that section, maintained regularly up until the second half of Book Fifteen. Each are painted on to the same deep blue background, with careful decoration in a rich palette of colours, highlighted by flourishes of white paint. Larger decorated initials, some with figures, are found at the start of most of the nineteen books, and at lesser divisions throughout the work.

In addition to the initials, the manuscript’s decoration includes a single full-page miniature (f. 191v), a half-page miniature (f. 257r), and several larger and column-width miniatures in Book Eighteen (\textit{On Animals}, ff. 260r-302r). Book Eighteen is the most commonly illustrated section of the \textit{De proprietatibus rerum}, sharing many of the characteristics of the popular bestiary tradition. The manuscript also includes one very large historiated initial ‘I’, at the start of the incipit, following Vivaldo’s dedication (fig. 2).

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\footnote{6}{After Ugoccione allegedly owned the manuscript, nothing is known of its provenance until the seventeenth century, save for a list of goods and prices bearing the dates of 1379-81 on ff. 324v-325v. At some point, the manuscript was acquired by the Niccolini family of Florence. In addition to Lami’s letter stating he saw the manuscript in the family’s collection, the manuscript also bears the stamped initials ‘P.N.’ in a circle on f. 5r, possibly those of Pietro Niccolini, archbishop of Florence from 1632 (d. 1651). The manuscript was subsequently acquired by Frederick North, 5th Earl of Guilford (1766-1827), whose bookplate (with shelfmark L/19/A) appears on f. [i] v. The manuscript was purchased by the British Museum in 1830 in a sale held by the bookseller Robert Harding Evans.}

\footnote{7}{See especially Rosa Casapullo and Miriam R. Policardo, ‘Tecniche della divulgazione scientifica nel volgarizzamento mantovano del “De proprietatibus rerum” di Bartolomeo Anglico’, Lingua e Stile, xxxviii: 2 (2003), pp. 139-76.}

\footnote{8}{See Meyer, \textit{Die Enzyklopädie des Bartholomäus Anglicus}, p. 387.}


\footnote{10}{The exception to this is Heinz Meyer’s brief inclusion of the manuscript in his article on the illustrations of the Latin versions of the text, ‘Die illustrierten lateinischen Handschriften’, pp. 372-3. Also, Fritz Saxl and Hans Meier list the astrological images in their \textit{Catalogue of Astrological and Mythological Illuminated Manuscripts of the Latin Middle Ages in Manuscripts in English Libraries}, vol. i, ed. Harry Bober (London, 1953), p. 3.}

\footnote{11}{Meyer, ‘Die illustrierten lateinischen Handschriften’, p. 372.}
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Fig. 2. Historiated initial ‘I’ featuring a man (Vivaldo?) in prayer; historiated initial ‘e’ featuring Christ. BL, Add. MS. 8785, f. 14r.
In the initial, a man – who appears to be a monk – kneels in prayer before God. If he is a monk, it is possible this is the sole reference to Bartholomaeus Anglicus in the entire work. However, it is also likely Vivaldo has again inserted himself into the work, shown doing God’s bidding by translating the text. Following the brief incipit, an initial ‘E’ is decorated with Christ’s haloed head at the start of the De proprietatibus rerum.

Medieval anatomy and the Add. MS. 8785 organs

Add. MS. 8785 is the only extant manuscript in the De proprietatibus rerum tradition to include illustrations of small, segmented organs and body parts. The books in which these images appear are Book Five: On the Parts of the Body (ff. 39r-57r), Book Six: On the Simple Members of the Body (e.g. bones, veins and hair) (ff. 57r-59v), and Book Seven: Categories of Men and Women, ‘Non-Natural’ Things, and Diseases of the Body and their Cures (ff. 59v-100v). Of specific interest to this study are the representations of the internal organs, which take place during the course of Book Five, between ff. 50v-55v. The images proceed in the following order, here listed with their Latin equivalents, English translation, and references to accompanying figures:

<table>
<thead>
<tr>
<th>Folio</th>
<th>Mantuan Title</th>
<th>Latin Equivalent</th>
<th>English Translation</th>
<th>Figure</th>
</tr>
</thead>
<tbody>
<tr>
<td>50v (text)-51r (initial)</td>
<td>Capitol del polmon</td>
<td>De pulmone</td>
<td>Chapter on the lungs</td>
<td>Fig. 3</td>
</tr>
<tr>
<td>51r</td>
<td>Capitol del cor</td>
<td>De corde</td>
<td>Chapter on the heart</td>
<td></td>
</tr>
<tr>
<td>52r</td>
<td>Capitol de l’anelit</td>
<td>De anelitu</td>
<td>Chapter on the breath</td>
<td>Fig. 4</td>
</tr>
<tr>
<td>52r</td>
<td>Capitol del stomacho</td>
<td>De stomacho</td>
<td>Chapter on the stomach</td>
<td></td>
</tr>
<tr>
<td>52v</td>
<td>Capitol del figà</td>
<td>De epate sive iecore</td>
<td>Chapter on the liver</td>
<td>Fig. 5</td>
</tr>
<tr>
<td>53r</td>
<td>Capitol de la fel</td>
<td>De felle</td>
<td>Chapter on the gallbladder</td>
<td>Fig. 6</td>
</tr>
<tr>
<td>53v</td>
<td>Capitol de la milça</td>
<td>De splene</td>
<td>Chapter on the spleen</td>
<td>Fig. 7</td>
</tr>
<tr>
<td>53v</td>
<td>Capitol dey interior, che s’apella viscera</td>
<td>De visceribus</td>
<td>Chapter on the interior, which is called the viscera</td>
<td></td>
</tr>
<tr>
<td>53v</td>
<td>Capitol de le rene</td>
<td>De renibus</td>
<td>Chapter on the kidneys</td>
<td></td>
</tr>
<tr>
<td>54r</td>
<td>Capitol de la vesiga</td>
<td>De vesica</td>
<td>Chapter on the bladder</td>
<td>Fig. 8</td>
</tr>
<tr>
<td>54r</td>
<td>Capitol de la urina</td>
<td>De urina</td>
<td>Chapter on the urine</td>
<td></td>
</tr>
<tr>
<td>54v</td>
<td>Capitol del ventr</td>
<td>De ventre, utere et alvo</td>
<td>Chapter on the abdomen (venter)</td>
<td>Fig. 9</td>
</tr>
<tr>
<td>55r</td>
<td>Capitol de l’ombilig, o sia bigol</td>
<td>De umbilico</td>
<td>Chapter on the umbilical [cord], or bigol</td>
<td>Fig. 10</td>
</tr>
<tr>
<td>55r</td>
<td>Capitol dey genitay</td>
<td>De genitalibus</td>
<td>Chapter on the genitals</td>
<td></td>
</tr>
<tr>
<td>55v</td>
<td>Capitol de la matris</td>
<td>De matrice</td>
<td>Chapter on the womb</td>
<td>Fig. 11</td>
</tr>
</tbody>
</table>

12 Mantuan titles and their Latin equivalents are found in Ghinassi, Dal Belcalzer al Castiglione, pp. 13-14.
Fig. 3. Historiated initial ‘p’ of the lungs (left) and ‘c’ of the heart (right). BL, Add. MS. 8785, f. 51r.
Fig. 4. Historiated initial ‘h’ of the breath (left) and ‘L’ of the stomach (right). BL, Add. MS. 8785, f. 52r.
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Fig. 5. Historiated initial ‘E’ of two livers. BL, Add. MS. 8785, f. 52v.
Fig. 6. Historiated initial ‘L’ of the gallbladder. BL, Add. MS. 8785, f. 53r.
Fig. 7. Historiated initials ‘L’ of the spleen (top left), ‘u’ of the viscera (bottom left), and ‘R’ of the kidneys (right). BL, Add. MS. 8785, f. 53v.
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Fig. 8. Historiated initials ‘u’ of the bladder (left) and ‘L’ of urine. BL., Add. MS. 8785, f. 54r.
Fig. 9. Historiated initial ‘u’ of the venter (abdomen). BL, Add. MS. 8785, f. 54v.
Fig. 10. Historiated initials ‘L’ of the umbilical cord (left) and ‘G’ of the genitals (right). BL, Add. MS. 8785, f. 55r.
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Fig. 11. Historiated initial ‘L’ of the womb. BL, Add. MS. 8785, f. 55v.
These organ drawings are small and undetailed, and some are unidentifiable without the aid of the descriptive chapter title, written in red ink next to each initial.

Add. MS. 8785 is one of only a handful of manuscripts to include drawings of the internal organs before human dissection was introduced in universities in the fourteenth century. At the very moment of this manuscript’s production, we witness the earliest evidence of the shift from traditional reliance upon text-based descriptions by the ancient authorities to first-hand, empirical investigations of the body through human dissection for the first time in millennia. The first recorded public opening of the body since antiquity occurred in Bologna in 1302: the autopsy of the criminal Azzolino, as part of a judicial proceeding to determine whether or not he had been poisoned. By 1316, we have the first recorded account of a human dissection, also in Bologna, undertaken by scholars in the medical faculty at the university. The rest of this essay explores the connection between Add. MS. 8785 and this extraordinary moment of change in the approach to learning and studying medicine, a movement that would eventually lead to the artist-anatomists of the late fifteenth and sixteenth centuries.

Medieval anatomical illustration

Like medicine in general, medieval anatomy was built upon the writings of the classical medical authorities. The earliest treatises, those associated with the mythical Hippocrates written in the fifth and fourth centuries B.C.E., contain no references to human dissection and stress the significance of understanding the diverse ways in which the four humours – black bile, red bile, blood, and phlegm – affected various organs and body parts. The primary emphasis was on understanding the operation of various parts and how they act together to achieve a specific overall function; put more simply, understanding the causes, rather than an anatomically accurate reality. A successful remedy for an illness or injury could only be prescribed with knowledge of these concepts. Although the celebrated Greek physician Galen of Pergamum (129–c. 216 CE) did not dissect human corpses, he conducted numerous public anatomies on animals with similar organs to humans, such as pigs and apes, and continually asserted the importance of anatomical knowledge for medical practice in his writings. He also performed surgical experiments, including successfully exposing the heart during surgery, and exhorted his readers to mimic his experimentations and dissections to witness his discoveries first-hand.

Along with herbals and cautery diagrams, anatomical images are among the small number of medically related illustrations to survive from antiquity. The earliest known anatomical images are found in a copy of the Glossarium Salomonis (Salomon Glossaries), made at the Benedictine monastery of St George in Prüfening, Bavaria in 1165 (Munich, Bayerische Staatsbibliothek, The only recorded instances of human dissection before the fourteenth century were those undertaken by Greek physicians Herophilus and Erasistratus in Alexandria in the first half of the third century B.C.E. For more on Herophilus and Erasistratus, see Henrich von Staden, Herophilus: The Art of Medicine in Early Alexandria (Cambridge, 1989, repr. 2007), and the bibliography therein. Walter Artelt transcribed the record of Azzolino’s autopsy in ‘Ältesten Nachrichten über die Sektion menschlicher Leichen im mittelalterlichen Abendland’, Abhandlungen zur Geschichte der Medizin und der Naturwissenschaften, xxiv (1940), p. 17. In 1316, Mondino de’Liuzzi (c. 1265-1326), a professor of medicine at Bologna, wrote his Anothomia Mundini, or ‘Anatomy of Mondino’, which contains the earliest medieval reference to the dissection of a human body for scientific purposes, allegedly occurring the year before. The reference is extremely matter-of-fact, and seems to indicate human dissection was already an established part of the curriculum. See Ernest Wickersheimer, Anatomies de Mondino de Liuzzi et de Guido de Vigevano (Paris, 1926). Galen’s works were first published in modern Latin translation in what remains the standard: C. G. Kühn, Galeni Opera omnia, 20 vols in 22 (Leipzig, 1819-33, repr. Hildesheim, 1965).
Five squat, full-figure images display, in turn, the veins, arteries, bones, nerves and muscles. These images are accompanied by a brief treatise based loosely on Galenic anatomy, the ‘Historia incisionis’ (Account of Incision), which describes the nine major systems of the body according to Galen; the final four are not pictured in the Prüfening manuscript. Known collectively as the Nine-System Figure Series, this series of images and text circulated throughout Europe until the mid-fifteenth century. The Nine-System Figure Series images were most likely created in late antiquity and filtered into Western Europe during the so-called ‘twelfth-century renaissance’ as part of the influx of new medical texts from the Islamic Middle East entering via Monte Cassino.

The oldest complete witness to the Nine-System Figure Series tradition is found in an English manuscript produced in the late twelfth century, now Cambridge, Gonville and Caius College, MS. 190/223. Also copied in a monastic setting, the Cambridge manuscript spreads the nine systems across as many folios. First are the simple systems (veins, arteries, bones, nerves, and muscles), followed by the complex systems (the male genitalia, female genitalia, the stomach and digestive system, and the brain and ocular system). The five simple systems are nearly identical to their Bavarian predecessors. The four complex systems, found here for the first time, are schematic abstractions: either impossible interior perspectives of the organ systems, or a depiction of the organ from the exterior.


See Taylor McCall, ‘Illuminating the Interior: The Illustrations of the Nine Systems of the Body and Anatomical Knowledge in Medieval Europe’ (PhD dissertation, University of Cambridge, 2017) for a complete account of the Nine-System Figure Series, the full ‘Historia incisionis’ text, and a survey of anatomical imagery produced during the Middle Ages.

Fig. 12. Stomach and internal organs. Cambridge, Gonville and Caius College, MS. 190/223, f. 5r. Late 12th century. Image: Courtesy of the Master and Fellows of Gonville and Caius College, Cambridge.
The organs of the abdomen in the Cambridge manuscript are the earliest standalone depictions of the internal organs, divorced from the context of the body (fig. 12).\textsuperscript{20} The Cambridge artist has spread them across an entire folio (5r), and sometimes presented various versions of the same part. The top of the folio reads ‘hic est ystoria stomachi divisa ab intestinis’ (‘here is the account of the stomach, separated from the intestines’).

There are eleven distinct organ renderings on the Cambridge organ leaf. The first, at top left, is the four-chambered stomach, displaying the four humours: phlegm (\textit{flegma}) and blood (\textit{sanguinis}) at the top and bottom, respectively, with red bile (\textit{colera rubea}) on the stomach’s right side (labelled \textit{latus stomachi dextrum}), and black bile (\textit{colera nigra}) on the left side (\textit{latus stomachi sinistra}). The stomach was considered a type of ‘oven’ where food was ‘cooked’ by the body’s natural heat, and waste was expelled out of the bottom tube, described by the text to the right of the diagram. The cooking process was considered necessary to keep the humours in balance, and thus the body healthy.\textsuperscript{21}

Below the stomach is an uncoloured sketch of the gallbladder separated from the liver (\textit{saccule fellis diuisus ab epate}) and directly below that, painted brown, is an enlarged depiction of the shoe sole-shaped spleen (\textit{splen}). The fourth drawing, to the right of the spleen, is difficult to identify, but the first word in the caption appears to be \textit{fauces} (throat) followed by \textit{unde spiramus}, ‘how we breathe’, indicating it is the trachea. The fifth organ is a flame-shaped line drawing with a teardrop within labelled \textit{mappa}: a schematic depiction of the greater omentum, a flap of the peritoneum which hangs down from the stomach over the intestines. To the right of the greater omentum is the twisted digestive tract. The small pair of brown, half-moon-shaped kidneys is above (\textit{renes}), and directly above that, two diamonds fitted together, meant to display the trachea (here called the ‘nutritive way’, \textit{via nutricia}) fitting into the lungs (the \textit{pine} (meant to be \textit{penne})? \textit{pulmonis}, the feather of the lung). To the left is the red heart (\textit{figura cordis}) with small ‘ears’ on either side potentially meant to refer to the pericardium (a medieval convention). The tenth diagram features a brown five-lobed liver curling over the stomach (‘\textit{epar stomachi optinet cum .v. frustis}’, ‘the liver with five lobes holds the stomach’), with the square gallbladder inside. The final image is an enlarged view of the liver, painted brown, with the unpainted gallbladder positioned in the centre. The gallbladder was considered to process red bile (\textit{colera Rubea}) and the three channels running out of it describe the movement of the red bile, which went into the gallbladder (‘\textit{per hanc uiam colera.Rubea. decurrit}’) and out to the spleen (‘\textit{via hec currit in splen}’).

Taken together, this cluster of organs with their labels – featured, as they are, alongside eight other diagrams of the interior – comes across as busy and even disorganized. Several of the organs are so abstracted that they would be impossible to identify without the descriptive labels. They fulfil a perceived need to communicate a general idea of what each of these parts looked like; they were not meant to provide more than an indication of their shapes, for the greater purpose of describing exactly how that shape functioned within the larger whole. The small descriptions and labels around the images work in concert with them to communicate complicated processes in as simplified a manner as possible.

In contrast, the organs of Add. MS. 8785 are simple, organized and neatly encased in their initial spaces. Like the small captions in the Cambridge manuscript, the descriptions introduced by each initial details the part’s function within the body, albeit in much more detail. The \textit{De proprietatibus rerum} reflects the Arabic tradition of condensing practical medical writings

\textsuperscript{20} There are three other extant versions of this system. Pisa, Universitaria Biblioteca, MS. 735 (second quarter of the thirteenth century, Italy?) has the organs scattered around diagrams of the male genitalia and the brain and eyes, and they are clustered together in the middle of the same folio in London, Wellcome Library, MS. 49 (c. 1425, England). Oxford, Bodleian Library, MS. Ashmole 399 (third and fourth quarters of the thirteenth century, England) features enlarged organs spread across several folios.

into a single, abridged encyclopaedia of reference material a capite ad calcem (literally, ‘from head to heel’), a format transported to Europe from the Middle East beginning in the eleventh century. The organs of Book Five proceed accordingly: the book begins with the head and the brain, and ends, appropriately, with an image and description of the heel. The depictions of the internal organs proceed from the thorax, to the abdomen, and down to the pelvis.

Following the description and straightforward depiction of the breasts (le mamelle) is the lung initial (fig. 3). The image within the ‘p’ for polmon is ambiguous: while it might simply be flourishing on the part of an artist unsure of the shape of the lungs, the white and red organic, poly-lobed shapes might also be a creative interpretation of the action of the breath passing though the lungs. Its partner on the page, the heart, is an apple-shaped globe of red paint with no additional identifiable characteristics, including the standard convention of adding ‘ears’ on either side. The next folio presents the breath and the stomach (fig. 4): the breath as energetic swirls of colour and the stomach as an oval with tubes extending from the top and bottom, as seen in the Cambridge diagram.

The book then progresses downwards from the thorax to the abdomen. The first organ is the liver (fig. 5), and in order to remain symmetrical within the bounds of the ‘E’ initial, the artist has supplied us with two livers. The livers, interestingly, are three-lobed; Galenic anatomy maintained the liver had five lobes, and the majority of medieval liver depictions conform to this. We next see the gallbladder, which is coloured greenish-grey and includes a single tube (rather than the conventional three) extending from the top. The next folio (fig. 6) has three organ initials: one a straightforward representation of the spleen, the second a reddish-brown curved shape that might be an attempt to represent the viscera, and the third a body shown in profile as the image for the kidneys. The latter is an interesting decision on the part of the artist, as the kidneys are among the simplest and most recognizable depictions of the internal organs: two half-moon shapes, as seen on the Cambridge organ leaf.

The book then moves to the pelvic region. The first initial, an image of the bladder (fig. 7), is an uncoloured, rounded orb with a tube at the top. The next initial on the same folio is a depiction of the lower half of a male body in an outdoor setting, urinating on to a small plant: a reasonable scene for a description of the urine. The following folio (fig. 8) contains a single initial for the ‘capitol del ventr’ or chapter on the venter. This appears to be a farting or defecating bottom; apt, if so, considering this section describes the digestive system.

The final two folios containing representations of the internal organs show those associated with reproduction. The initial at the start of the description of the umbilical cord (fig. 9) has a jagged shape extending across the blue background from left to right, outlined in white. The second initial on this folio includes a straightforward representation of the testicles for the section on the genitals.

The last folio concerns the womb. The initial image – a smooth, rounded orb with a slim neck at the top – appears to be a copy of the same image used for the bladder (fig. 7). This is somewhat surprising, as there were no shortages of representations of the womb circulating in this period. Aside from the schematic womb diagrams associated with the Nine-System Figure Series, a popular set of medical images were the positions of the foetus in the womb, usually associated with the late antique Gynaecia written in Latin by Muscio. These images are found in several manuscripts, the earliest of which dates to the ninth century, and can be considered a type of anatomical imagery: representations of the womb, usually drawn as a circle or rounded flask with the neck pointing downwards, featuring a homunculus (or more – sometimes up to eleven) in various acrobatic positions within.


23 The oldest manuscript in this tradition is found in Brussels, Bibliothèque royale de Belgique, MS. 3701-15, fully digitized online < http://lucia.kbr.be/multi/KBR_3701-15Viewer/imageViewer.html> [accessed 16 February 2018]. Jones discusses the images and text in Medieval Medicine, pp. 39-41.
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We can only speculate as to the decisions behind the representations chosen by the artist (or, indeed, artists) of Add. MS. 8785. What this examination of the organ initials has shown on the whole, however, is either an unawareness of conventional representations, or a desire to create different imagery. Despite their simplicity, the organs of Add. MS. 8785 are among the earliest examples of organ images created independently of the established Nine-System Figure Series tradition. The only other datable example of organs created in this period falls squarely within the range of dates that this codex was made: 1304, as three-dimensional models accompanying the anatomical lectures of Henri de Mondeville (c.1260-1320).24 Mondeville was an educated surgeon teaching at the universities in Montpellier and Paris, and his work can be understood as the product of several decades of surgeon-authors responsible for their own anatomical works.

Within the confines of learned medicine, anatomical knowledge was primarily considered useful by practitioners for the ultimate goal of treatment: in order to prescribe effective remedies or perform a surgery, the student had to be well versed in the purpose, function and placement of the parts of the body. The emergence of scientific human dissection is attributable to many factors, but it is important to note that such demonstrations remained infrequent before the start of the sixteenth century because they were not considered to provide additional evidence to aid in the physiological arguments that preoccupied students and scholars in medical faculties. Instead, debates and dissections of texts were considered more valuable in discussing those issues, and a dissected corpse, as an accompaniment to discussions of anatomy, was not very useful in that sense.25

From the start, the Nine-System Figures circulated alongside surgical materials, first in monastic spheres of learning and then within scholastic realms as universities grew in popularity across Europe. However, the discipline of surgery underwent a dramatic change beginning in the early thirteenth century, as the focus of the practice shifted from minor procedures undertaken infrequently and mostly performed by illiterate barber-surgeons, to the rise of what Michael McVaugh has called the ‘rational’ surgeons: literate, educated men who incorporated Galenic theory into their original surgical manuals.26 These so-called rational surgeons promoted surgery as a subset of theoretical medicine, worthy of university study. The opening of the body within a university milieu, both as part of surgical procedures and as a means to better understanding anatomical texts through dissection, began to take root as a result of their efforts.

24 Henri de Mondeville has been the object of much fascination for scholars. His Chirurgia appears in three modern editions: in Latin, Julius Pagel, Die Chirurgie des Heinrich von Mondeville (Berlin, 1892); in an abridged translation of the first two books of the Chirurgia, as they were translated into French during Mondeville’s lifetime: Alphonse Bos, Chirurgie de Henri de Mondeville (Paris, 1897-8); and a French edition of the entire work, Edouard Nicaise, Chirurgie de Maître Henri de Mondeville (Paris, 1893). Marie-Christine Pouchelle produced a study focusing on Mondeville, The Body and Surgery in the Middle Ages, translated by Rosemary Morris (Cambridge, 1990) (first published in French as Corps et Chirurgie a l’Apogée du Moyen-Age (Paris, 1983)). Pouchelle includes a helpful list of all the known manuscripts containing Mondeville’s Chirurgia, partial as well as complete, which number some 34 manuscripts, as well as a full account of the principal studies on Mondeville, Body and Surgery, pp. 258-62. For the purposes of this study, extremely useful was Loren MacKinney’s ‘The Beginnings of Western Scientific Anatomy: New Evidence and a Revision in the Interpretation of Mondeville’s role’, Medical History, vi (1962), pp. 232-9.


26 See Michael McVaugh, The Rational Surgery of the Middle Ages (Florence, 2006). McVaugh specifically defines the ‘rational’ surgeons as a group of five men working between approximately 1240 and 1320 in Italy and France: Teodorico Borgognoni (fl. 1240s), Bruno Longobucco (Longoburgensis) (fl. 1250s), Guglielmo da Saliceto (fl. 1260s-70s), Lanfranc of Milan (fl. 1290s) and Henri de Mondeville (fl. 1306-1314). Each subsequent author was aware of his predecessor, building a corpus of writings that would transform surgery from a lesser, manual discipline to one recognized as important enough to be taught as its own university subject area.
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Several of these rational surgeons were not only content to expand their discipline through the development of new texts; they created their own visual tools as supplements, recognizing the important role images could play in elucidating their words. The images developed by the rational surgeons largely reject schematic, abstracted exposition of single organs, placing far more emphasis on visualizing the organs as they exist within the context of the entire body. In some ways, these visual aids reflect the beginnings of the slow movement towards the intensely detailed figures designed by anatomists associated with the Renaissance.27

Mondeville explained his decision to include images of organs and dissected figures in his Anathomia, book one of his intended five-book surgical manual Chirurgia (1312), as the means ‘by which alone the entire anatomy and inquiry into the human body […] and each of its members, internal and external, in whole and in part […] can be demonstrated with great precision’.28 Mondeville believed the key to successful surgical practice was in-depth knowledge of the interior, and chose to enhance his anatomical descriptions with graphics.

Mondeville’s student, Guy de Chauliac (c. 1300-1368), author of his own popular Inventarium or Chirurgia magna, recorded his mentor’s career in what has been called the first history of surgery, in which he described the achievements of his predecessors in the two hundred years before his time.29 According to Chauliac, Mondeville lectured from three-dimensional models of organs in Montpellier in 1304, and subsequently with full-length figures in Paris in 1306.30 These images can be found in two different types of manuscripts: as simple line drawings, likely copied by students, and as finished, illuminated scenes incorporated into a version of Chauliac’s work by a professional illuminator.

The three manuscripts that allegedly reproduce the organ models used by Mondeville in Montpellier in 1304 are London, Royal College of Physicians (RCP), MS. 227 (Figs. 13-14)31; Erfurt, Universitätsbibliothek Erfurt, Bibliotheca Amploniana, MS. Quatt 21032; and Berlin, Handschriften-Sammlung zu Erfurt, Handschriften in Quart, vols, xiv (Leiden, 1997). McVaugh also published an English translation of parts of the Chirurgia magna, including the History of Surgery, in Edward Grant (ed.), A Source Book in Medieval Science (Cambridge, 1974), pp. 791-5.

27 Sachiko Kusukawa has delved into the fascinating relationships between anatomical writers (particularly Vesalius) and the artists and woodblock carvers they hired to create the images they desired in sixteenth-century Europe; see Picturing the Book of Nature: Image, Text, and Argument in Sixteenth-Century Human Anatomy and Medical Botany (Chicago, 2012), pp. 178-248.

28 The entire quote is: ‘Per quas solas tota anatomia et historia corporis humani tam viri quam mulieris tam integri quam fissi, tam a parte anteriori quam a parte posteriori et omnium et singulorum membrorum ipsius tam intrinsecorum quam extrinsecorum tam integrorum quam divisorum sive diversificorum omnibus et singulis modis quibus possunt diversis modo humano conspectui praesentari, potest clarissime demonstrari.’ Latin transcribed by Pagel, Die Chirurgie des Heinrich von Mondeville, pp. 18-19.


30 Guy is slightly ambiguous about which figures were used in which lecture series, and so this is the contention of MacKinney, in ‘The Beginnings of Western Scientific Anatomy’, pp. 232-9.

31 There is very little scholarship on all three of these manuscripts. The Royal College of Physicians manuscript is catalogued in Neil Ker, Medieval Manuscripts in British Libraries, vol. i: London (Oxford, 1964), pp. 199-201; and in Loren C. MacKinney, Medical Illustrations in Medieval Manuscripts (London, 1965), no. 88.3. MacKinney, who was the first to discuss the RCP manuscript in ‘The Beginnings of Western Scientific Anatomy’, pp. 232-9, dates it to the late fourteenth century, but it seems to belong more towards the beginning of the fourteenth century, as Ker argues, and certainly, the text indicates it cannot be much later than 1350.

32 The Erfurt manuscript was catalogued in William Schum, Beschreibendes Verzeichnis der Amplonianischen Handschriften-Sammlung zu Erfurt, Handschriften in Quart (Berlin, 1887), no. 210, pp. 467-8. The manuscript is comprised of several different surgical texts, dating from 1276 to the fourteenth century, and Schum considers it to have been produced in southern France or Italy. Mondeville’s Anathomia is on ff. 83-105. Sudhoff discusses it in relation to the Berlin manuscript and reproduces the organs in Ein Beitrag zur Geschichte der Anatomie, pp. 82-9 and plate XXIV.
Staatsbibliothek, MS. Lat. 219. The incipits of all three of the manuscripts proclaim them to be copies of Mondeville’s 1304 anatomical lectures:

Having been composed in Montpellier by Magister Henry of Mundavilla [Mondeville], surgeon to the most distinguished king of France, at the request of some venerable scholars of medicine, taking account of what was demonstrated and made accessible to the senses in their presence in the year of our Lord 1304.

The *incipit* obliquely refers to the accompanying figures (‘what was demonstrated and made accessible to the senses’) Mondeville used in these 1304 lectures, but it is not clear whether they were two-dimensional images or three-dimensional models.

Instead of presenting the organs on a single folio, as seen in the Cambridge version of the Nine-System Figure Series’s internal viscera, they are positioned either in the margins (RCP and Erfurt manuscripts) or incorporated into the columns of text (as is the case with the Berlin manuscript). In the RCP and Berlin manuscripts, the organs are enclosed within an ink border, separating them from each other and emphasizing they are more than just marginal scribbles or annotations. In each case, the images are workaday: functional, small and uncoloured, labelled by small captions. The organs drawn include the sutures of the skull, the heart (*forma cordis*) labelled with the *vena epatis*, *arteria magna* and *arteria venalis*, the liver (*forma epartis*), the gallbladder (*cistis fellis*), the spleen (*forma splenis*), the kidneys (*forma renum*) with two ‘portals’ leading from each, upwards (*pori uritides superiores*) and downwards (*pori uritides versus vesicam*), and the bladder (*forma vesicae*). There are also images of an ‘empty’ and ‘full’ uterus (*forma matricis vacuae* and *plena*), although there is no actual foetus pictured; the empty uterus looks like a deflated balloon compared to the full.

While the organ drawings in these three manuscripts can be considered part of the same general taste for depictions of disembodied, isolated sketches of internal organs that we see in the Nine-System Figure Series manuscripts, they bear little resemblance to their Nine-System Figure Series counterparts beyond superficial similarities, such as the appearance of the two bean-shaped kidneys and descriptive captions alongside the figures. They bear even less resemblance to the Add. MS. 8785 images. As surgery and anatomy drew more interest, it seems existing anatomical imagery – which was at that time almost exclusively the Nine-System Figure Series – was either unknown to or inadequate for the purposes of these surgeon-authors, and thus they devised their own visual accompaniments to their texts. This marks a shift in the agency of these author/illustrators, as they turned from copying an available, anonymous iconography to creating new images to suit their specific needs. Although unrelated to surgeons or surgical texts, the Add. MS. 8785 organs represent the type of knowledge on display in the encyclopaedic format, broken down into initials: parts that make up the whole.

Vivaldo Belcalzer most likely translated the *De proprietatibus rerum* from a Latin version owned by the Bonacolsi family, and probably at their behest. The illustrative programme, possibly also overseen by Vivaldo, must have inspired awe at the sheer number of images, brightly coloured and populated with engaging figures. It was an expensive commission.

33 Scholarship on the Berlin manuscript has been largely confined to Sudhoff, *Ein Beitrag zur Geschichte der Anatomie*, pp. 82-9 and plate XXIV.


35 Sudhoff transcribes and describes the organ drawings in *Ein Beitrag zur Geschichte der Anatomie*, pp. 88-9.
Fig. 13. Mondeville’s Anathomia with marginal images of the gallbladder, greater omentum, and empty and full wombs. London, Royal College of Physicians, MS 227, f. 229r. Early 14th century, England (?). Image: © Royal College of Physicians.
Fig. 14. Details of the stomach (f. 228r) (left) and kidneys (f. 229v) (right). London, Royal College of Physicians, MS 227.
Images: © Royal College of Physicians.
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However, the extensive use of imagery was also useful; the drawings functioned as visual reminders for the many sections included in the book and might also assist the reader in visualizing things otherwise inaccessible to the human eye. The fantastical animals in Book Eighteen – the fauns, satyrs and monstrous races – are perfect examples of images both entertaining and educational. In much the same way, the disembodied organs of Add. MS. 8785 would not have been useful to a practising physician, but indicate the perceived importance of all-encompassing encyclopaedic knowledge to a noble ruler like Bonacolsi.

Soon after he introduced individual organ drawings in his lectures, Mondeville replaced them with full-body anatomical figures. Likewise, Add. MS. 8785 appears to be the only manuscript in the entire De proprietatibus rerum tradition to include the disembodied organ initials. The only other version of the encyclopaedia with a similar amount of illustration, a French manuscript made in the fifteenth century (Paris, Bibliothèque nationale de France, MS. Fr. 22532), uses full-body figures to illustrate each organ chapter in Book Five. The segmented visual approach to the organs of the human body was not a particularly popular one, and did not persist; subsequent new anatomical images created in the fourteenth and fifteenth centuries situated the organs within the context of the full body.

The organs of Add. MS. 8785 retain their own charm and usefulness as memorable parts of Bartholomaeus’s – or Vivaldo’s – enormous encyclopaedia. To consider Michael Camille’s influential study of irreverent figures in the context of this codex, we must concede that despite their playfulness and profanity, they are most assuredly not marginal. Unlike their Mondeville counterparts, the Add. MS. 8785 organs occupy a position traditionally reserved for the sacred and serious: within the letters themselves, indelibly entwined with the words.

36 A microfilm of the manuscript has been digitized by the BnF: [http://gallica.bnf.fr/ark:/12148/btv1b90592858/f20.planchecontact.r=MS%20fr%2022532] [accessed 26 February 2018]. For more bibliography, see Meyer, ‘Die illustrierten lateinischen Handschriften’, p. 373.

37 For instance, the surgeon Guido da Vigevano (c. 1300-1349) depicted the organs within the body of a corpse at various periods during the dissection process in his Anatomia Philippi septimi (Chantilly, Musée Condé, MS. 334). For more on Guido, see Ernest Wickersheimer, ‘L’Anatomie de Guido de Vigevano, médecin de la reine Jeanne de Bourgogne (1345)’, Archiv für Geschichte der Medizin, vii (1913), pp. 1-25. The manuscript is also digitized in full: [http://bvmm.irht.cnrs.fr/consult/consult.php?reproductionId=16063] [accessed 12 February 2018].