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The Book, the Body, the Scalpel: Six Engraved Title Pages for Anatomical Treatises of the First Half of the Sixteenth Century

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# The book, the body, the scalpel

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## *Six engraved title pages for anatomical treatises of the first half of the sixteenth century*

ANDREA CARLINO

The purpose of this essay is to show the changing status of the anatomist and his work during the late fifteenth and the early sixteenth century through an examination of five title pages that depict anatomy lessons as well as other aspects of the relationship between the physician and the body and, therefore, of the relationship between theory and practice in Renaissance anatomy.

These title pages show the actors and some of the circumstances of the staging of public dissection. Each frontispiece tells a story and gives some clues to what the representation implies. I will concentrate on what the frontispiece (its author, as well as its patron) aims to show; rather than the connection to actual practice or the truthfulness of the representation. From this point of view, the public image of themselves which physicians attempt to present is much more meaningful than the reality.

The first didactic manual to deal with the technical details of the practice of anatomy in its entirety was the *Anatomia* of Mundinus da Luzzi, which first appeared in Bologna in 1316. This work described what was already known, without venturing on any research that might have questioned traditional anatomical knowledge. It is evident that Mundinus followed closely the *De locis affectibus* and the *De iuvamentis* of Galen, while making occasional references to the works of Avicenna. Yet the descriptions contained in the text are clearly based on the direct observation of corpses; for the first time since the Greeks and the Arabs, there was a *mise-en-texte* of anatomy as it was and as it should be practiced. After the corpse was laid on the anatomical table, a complete dissection was carried out over a period of four days, starting from the abdomen, then moving up to the chest and the head and ending with the limbs.

The first documented dissection of a human body took place at the University of Padua in 1341. Many others were performed throughout Northern Italy during the fourteenth and fifteenth centuries. Apparently, they all served the same merely illustrative purpose as the

*Anatomia* of Mundinus, which was probably the written guide for all these dissections. Research on and within the human body was not the aim; instead, the practice of dissection was intended to confirm the classic account, particularly that of Galen.

The first frontispiece I will examine is that of the 1493 printed edition of Mundinus's *Anatomia* included in *Fasciculo di Medicina* by John of Kentham, published in Venice by Gregorio de Gregoriis (fig. 1). In this short treatise, Mundinus showed that he was familiar with the practice of anatomy. Printed almost two centuries after publication, the title page of the book showed that the physician had set himself on the *cathedra* and that the spectators' attention was concentrated on him rather than on the corpse and its vicissitudes under the dissectors' tools. It is apparent that the author of the frontispiece<sup>1</sup> drew on his own experience and observation of anatomy. Accordingly, the frontispiece shows the distance between action and text: the distance of the teacher on the *cathedra* from the corpse on the dissection table reflects that between practice and the related theory.

This text, which refers so explicitly to the direct observation of corpses and to the practice of anatomy, is introduced by an illustration that contradicts it. This dichotomy, it seems, is due to the fact that dissection, as it was then practiced and as it may have been witnessed by the engraver of the frontispiece, was more striking and memorable than the written text. Its great impact on the artist was probably due to his involvement in an everyday practice that had exceeded and transgressed the intention and sense of the text, prompting the engraver to record what he had actually observed.

Two radically different accounts of the same practice, one written, the other drawn, are contained side by side in *Fasciculo di Medicina*. I tend to think that this suggests a shift in the practice of anatomy

1. The frontispiece has been tentatively attributed to Gentile Bellini. Cf. A. Hyatt Mayor, *Artists and Anatomists*. New York 1.1984, p. 61.

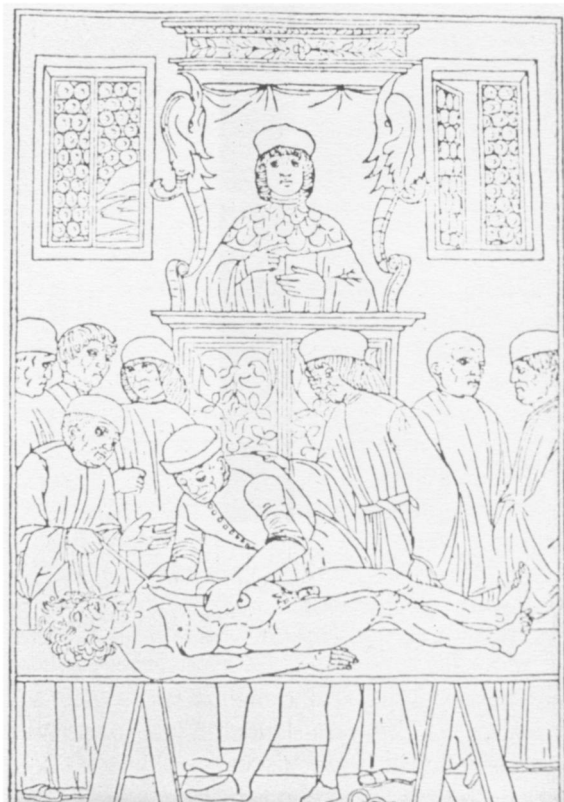


Figure 1. Anonymous, title page of *Anatomia Mundini*, in J. of Kentham, *Fasciculus di medicina*, Venice 1493.

between the fourteenth century and the end of the fifteenth century, which seems to have resulted from the illustrative nature of anatomy at that time. Research and scientific investigation were neglected, so interest in dissection waned. My supposition can be tested on some examples that seem particularly significant. They show the increasing frequency of public dissections in those years, as well as the artists' novel interest in human anatomy.

At the Galleria degli Uffizi in Florence there is a painting by Pesellino, probably dating from circa 1450 and originally part of the predella of an altarpiece in Santa Croce. It depicts a miracle performed by Saint Anthony of Padua. According to tradition, Saint Anthony was asked to deliver a funeral sermon for a very rich man who had been a usurer well known for his avarice. The saint chose the text: "Ubi est thesaurus, ibi cor tuum."<sup>2</sup> Instead of absolving the man,

2. Matthew, VI, 21. See also Mrs. Jameson, *Legends of the monastic orders. As represented in the fine arts*. London 1891, 2.2. p. 283 f.

he declared that he was damned for all eternity. His heart—he added—could be found in the trunk where the man had kept his treasure. When the trunk was opened, the miser's heart was found inside. Moreover, Saint Anthony ordered that the dead man's chest be cut open so that everybody could have certain proof that the heart was missing. This was done and—how could it be otherwise?—the heart was not there.

Pesellino's painting (fig. 2) depicts this miracle as if it were an anatomy lesson; the saint is like an academic who delivers his lesson (his sermon) *ex cathedra*, with the miser's corpse lying before him. A woman (the *prosector*) opens the dead man's chest, following the instructions of an older man (the *ostensor*) standing on her left. Five more women (either students or colleagues) surround the corpse; a Franciscan friar assists at the *cathedra*.

Pesellino and Mundinus's engraver show the practice of anatomy in a very similar way, which is odd, considering the very different contexts of the two images. This type of representation persists, however. In 1535, Berengarius of Carpi's *Isegoee* was published in Venice; he was a physician working and teaching in Bologna. The frontispiece of his work (fig. 3) also represents an anatomy lesson; the teacher, on the *cathedra*, is reading a text; two people in academic dress are working on the corpse, surrounded by others, similarly clad. It is precisely the same representation as in the former two instances. A change in the perspective and an additional personage in nonacademic dress holding a round vessel are the only variation from the type represented by the frontispiece of the *Anatomia*. The anatomy lesson represented in the pictures follows the lines of the *quodlibetum*:

The sophisticated public disputes what, from the thirteenth century onward, had become as it were the show cases through which the non-academic outsider could observe and enjoy the goings-on of the universities.<sup>3</sup>

The *quodlibeta* that took place in the faculties of medicine (like all the academic *quodlibeta*) were performances intended to reassert academic authority and classical learning rather than promote scientific progress and new discoveries.

In the title pages here described the actors' roles are clearly defined. The teacher is always seated on his "chair," reciting or reading some Galenic text, such as the first book of Avicenna's *Canon* or Mundinus's

3. W. Hecksher, *Rembrandt's anatomy of Dr. Nicolas Tulp: an iconographical study*. New York, 1984, p. 61.



Figure 2. Pesellino, *Miracle of the Miser's Heart* (detail), Florence, Uffizi Gallery (from Mrs. Jameson, *Legends of the monastic orders, as represented in the fine arts*, London 1891).

*Anatomy*, although after 1490 Galen's works were also becoming available in the Latin translation. Two men are working on the body (figs. 1, 3). The *prosector* (the only one who is not wearing an academic gown in Mundinus's frontispiece) holds a knife. He is about to make the first incision on the corpse. Next to him is another figure clasping a *radius*. He is the *demonstrator* or *ostensor*, whose task is to indicate to the *prosector* where and how he should cut, following the words of the teacher, whose chair sets him outside and above the action.

The *ostensor's* role is obviously to mediate between theoretical knowledge and technical skill. The *prosector* is a barber transposed to a context different from his usual one; manual skill was still underestimated, particularly among medical men.<sup>4</sup> None of the dissectors would have known Latin, which explains why they lacked direct access to medical knowledge. Therefore, the *ostensor's* role as mediator was also to translate the Latin text of the teacher into the vernacular.

Six other figures appear in Mundinus's frontispiece (fig. 1). They are also placed behind the table but have no direct contact with the corpse. They seem more

intent on a discussion, and their dress suggests that they are academics. They will launch the second part of the *quodlibetum*, that is, the discussion that usually followed the reading of the text. Only one of them is really interested in the corpse.

The frontispiece of Berengarius's book (fig. 3) shows the same scene. No one not strictly involved in the dissection (*ostensor* and *prosector*) pays any attention to what happens on the anatomical table; no one seems aware of the importance and the advantages of inspecting real anatomical features. All this suggests that the actual act of dissection was of little interest. It was a ritual performance, and scientifically fruitless. The physicians would attend them time and time again and know every single move. Indeed, the setting of the scene does not change between 1450 and 1535; on the contrary, it seems as if the structure of the *quodlibetum* became quite set. Notwithstanding this, the fact that Berengarius da Carpi's book is illustrated hints at a new visual interest and at a radical change both in didactic and in anatomical practice.

Three features of the illustration suggest this formalizing of the *quodlibet*, or perhaps more accurately, of its representation:

1. The presence of a figure, holding a receptacle, who stands behind the *prosector*. His posture and his clothing imply that he is an assistant. He is there so as to clarify the roles of the different actors. The hierarchy is stressed and the functions of the characters are more

4. Vesalius calls them *plebii*. They were of little importance and unskilled in medical discipline. They were used for manual work. Cf. A. Vesalius, *De humani corporis fabrica*, Basileae, 4. Ioannes Oporinus, 1543, f. 2r.

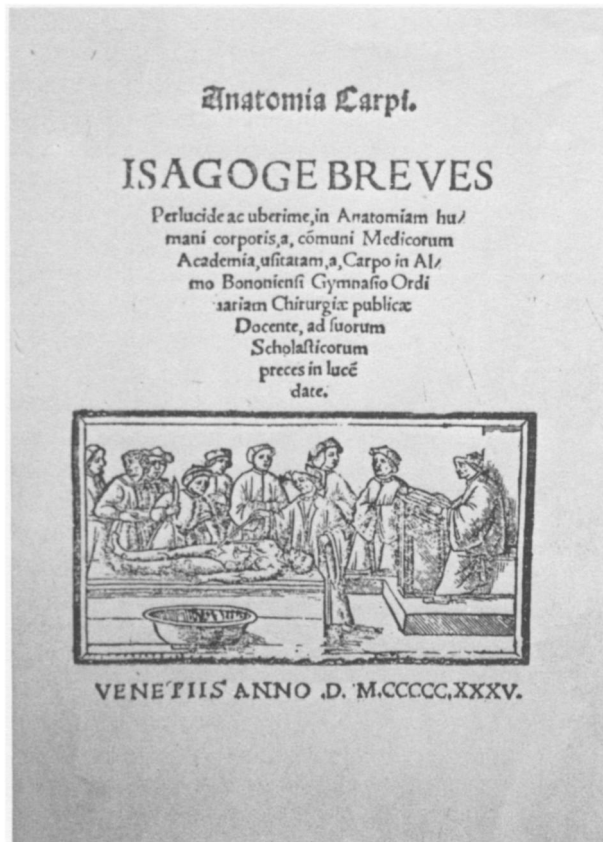


Figure 3. Anonymous, title page of Berengarius of Carpi, *Isagogae breves*, Venice 1535.

precisely defined than in the frontispiece of Mundinus's *Anatomia*.

2. Six onlookers (still six) and the teacher/reader are seated on benches, all placed on one platform. They are wearing similar gowns and hats. The privileged space, determined and defined by the platform, is contrasted with the space in which the anatomical table (the space of manual work) is placed. Thus, besides an emphasis on the definition of roles, as far as the dissection, the demonstration, the reading, and the discussion are concerned, we can observe a more elaborate protocol that decides the *distributio sedendi ordinis pro dignitate* (cf. Hecksher, op. cit., p. 46).

3. As against the *Anatomia*, in which the teacher repeats (recites) mnemonically, this frontispiece shows him reading a book, which is clearly visible on the desk: he has the classical medical authority before him.

One engraving—published in Paris in 1531 by Simon de Colines, to illustrate Galen's *De anatomicis administrationibus*, which was translated from the

Greek into Latin by Guenther de Ardenach (1497–1574)<sup>5</sup>—breaks the continuity in the practice of anatomy between 1450 and 1525 that I have attempted to trace; it also shows Berengarius's anatomical lesson to be the empty shell of an academic ritual.

Although Guenther is considered to be an intransigent advocate of the classical tradition in the history of medicine, the lower part of the *De anatomicis* frontispiece (fig. 4) shows something completely different from the representation of the lessons described above. The breaching of the boundary between the space reserved for anatomical practice and that of the academy is very striking: The room is filled with about twenty-five people, all dressed in academic gowns. A man's body lies on a table in the foreground. His abdomen has been opened. The figures around him seem to be involved in lively discussion. The body and its internal organs are the subject. With his right hand inserted into the corpse's viscera, a young student raises his left hand, as if to emphasize an opinion, addressed to another figure wearing more solemn clothes. The latter (on the right of the table) seems to be warning the student to be more cautious and prudent. At the center of the picture, another young man hands to a splendidly dressed figure what seems to be part of the corpse's internal organs.

Since Guenther's translation was the official textbook used by the University of Paris in its anatomy lessons, the significance of such an anomalous representation is obvious.

Everything shown in the woodcut shatters the model of the formalised *quodlibetum*: teachers and pupils who touch the corpse, the mingling, even the superimposition of anatomical theory and practice, at least in spatial terms; the absence of any book, the absence of a figure who recites or whose role is to direct the action; the breakdown of the hierarchy I have pointed out in the *dispositio*. Furthermore, the lively discussion (or rather, discussions), the vehemence of the figures' gestures, suggest a profoundly different attitude from the one characterized by the ordered formalism in the scenes of the other title pages. And yet, Guenther's work, chronologically and culturally, is contemporary with Berengarius's, and belongs to the same scientific tradition as Mundinus's treatise.

5. Guenther de Ardenach had been a teacher of Greek in Louvain and, from 1527, taught medicine in Paris. In 1533 Vesalius studied with him. In the preface to the *Fabrica*, Vesalius states that Guenther's dissections were merely simple *demonstrationes* and his teaching strictly Galenic.

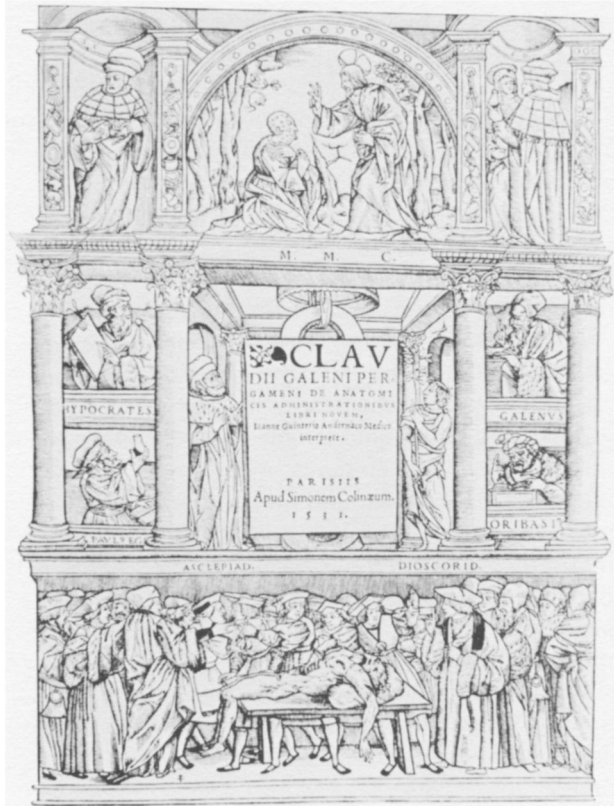


Figure 4. Anonymous, title page of Galenus, *De anatomicis administrationibus*, Paris 1531.

*Isagogae breves* was published only four years after *De anatomicis administrationibus*, and they are both cast in the galenic mold. Yet it creates a lesion, a caesura in the iconography of anatomical lectures.

The difference can be explained by the two books being printed in different places, but I do not think that is enough, especially if they are compared with another representation of the miracle of the miser's heart: the bas-relief, produced by Donatello between 1447 and 1450 for the high altar of the church of Saint Antonio in Padua (fig. 5). The saint is no longer shown on his *cathedra* but stands by the "anatomical table": in other words, he is placed in the space of anatomical practice, as in the frontispiece of *De anatomicis*. The crowd around the corpse conveys the same excitement (softened, in this case, by the religious and miraculous context) as the group of academics in Guenther's frontispiece. Moreover, the saint clasps a book under his left arm. Even though the book is a common attribute of Saint Anthony (cf. Jameson, *op. cit.*, p. 279), it might be seen (taking the anatomical metaphor as far as it will go) not only as a sign of the necessary presence of theoretical knowledge but also of the continued use of the text as a guide to dissection.

The standard *quodlibetum* was probably not the only model according to which anatomy lessons and the practice of dissection were organized. By the second half of the sixteenth century, other forms had already

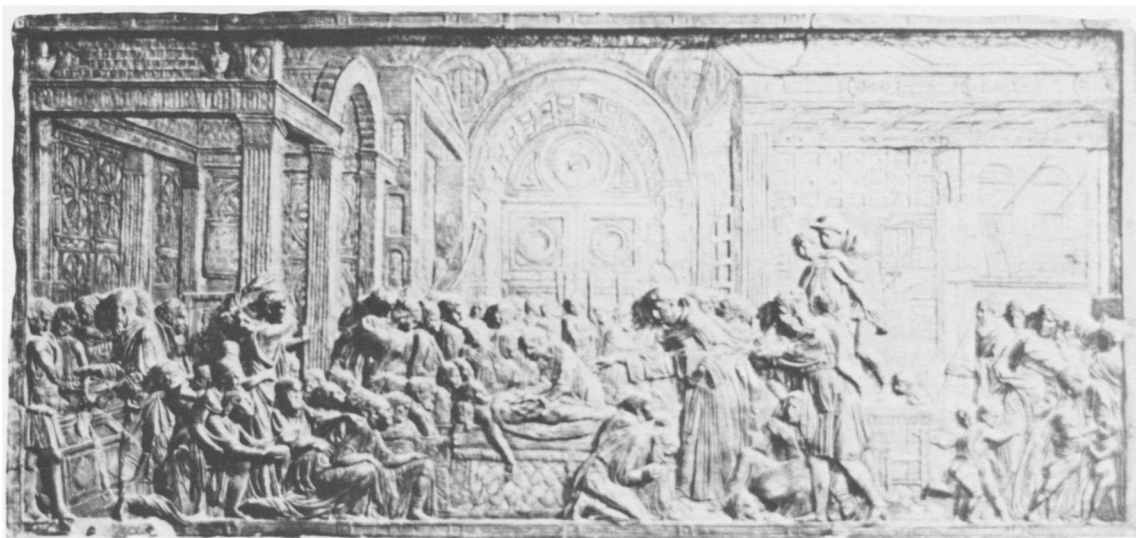


Figure 5. Donatello, *Miracle of the miser's heart*, Padua, Basilica of Saint Anthony, High Altar.

appeared which link it to a new attitude to medical science that was to be set out in the work of Andreas Vesalius.

Vesalius himself, writing about his university experience, states:

But this research [in anatomy] would have been of no consequence if, while applying myself to my medical studies in Paris, I had not taken to using my own hands and had remained satisfied with the viscera occasionally shown to me and my colleagues from outside only by extremely ignorant barbers in a couple of public dissections. Indeed at the same time as we happily saw medicine reborn, anatomy was still not understood properly, and I myself, having accomplished a few animal dissections under the guidance of the famous and never-enough praised Iacobus Sylvius, performed in public with greater freedom than was usual, encouraged by my colleagues and tutors, a third dissection which I had not previously had the opportunity of attending. And, setting about my work once more, with the barbers dismissed, I tried to show the hand muscles in a more accurate dissection.<sup>6</sup>

A student can therefore sometimes replace the *prosector* in his work and, according to Vesalius, may do so with better knowledge of first principles.

The frontispiece of *De anatomicis administrationibus* had already been published, and had been reused by Simon de Colines in another Galenic work: the folio edition of Linacre's translation of *Methodus medendi*, dedicated to Henry VIII.<sup>7</sup> The breakup of the *quodlibetarian* ceremony implied a crisis in the whole didactic and scientific system. It stood for the new sceptical spirit in science and the demand for experimental research unfettered by any textual authority. The dichotomy between theory and practice

6. A. Vesalius (1543), ff. 3r: "Verum id studium neitiquam successisset, si quum Parisijs medicinae operam darem, huic negotio manus admouissem ipse, ac obiter mihi et consodalibus ab imperitissimis tonsoribus in una atque altera publica sectione uisceribus aliquot superficietenus ostensis acqueuissem. adeo enim perfunctorie illic, ubi primum medicinam prospere renasci uidimus, Anatome tractabatur, ut ipse in brutorum aliquot sectionibus sub celebri ac nunquam satis laudato uiro Iacobo Syluio uersatus, tertiam cui unquam mihi adesse obtigit sectionem, solito absolutius, et sodalium et praeceptorum hortatu adductus publice administrarem. Quum autem secundo (tonsoribus ab opere iam relegatis) illam aggrederer, musculos manus cum accuratori uiscerum dissectione conatus sum ostendere."

7. Cf. Ch. Singer, "Some Vesalian Problems," *Bulletin of History of Medicine*, 1945, 5, p. 435. A detailed description of the frontispiece is in P. Rénouard, *Bibliographie des éditions de Simon de Colines*, Paris 1894.

that had been accepted unquestioningly is replaced by a desire to achieve a synthesis of the two.

The image of the physician in the title pages discussed so far is that of the theorist and scholar who, according to the Galenic tradition, prefers philology to investigative practice. Nor is it uncommon to come across Hellenist physicians: Guenther, for example, taught Greek in Louvain. The publication of the classical treatises in translations allowed a renewal in the approach to medical knowledge. At the same time, the preoccupations of the physicians and their status had turned them to learning that neglected practice; it was a time when discoveries were made through the book. The book had become the most useful instrument of medical discipline.

The *Fasciculo di Medicini* contains another woodcut (fig. 6)—probably executed in the same period as Mundinus's *Anatomia*—that shows Pietro di Montagnana at his desk. He writes, surrounded by books, consulting a text placed on a lectern. The name of the author or the title of each work are inscribed on the bindings: these texts form the physician's essential library, the fundamentals of medicine: Avicenna's book links Greek and Arab classics. Pliny's *Natural History* is on the lectern; below on the shelf, the *Conciliator* of Pietro d'Abano, and the works of Isaac the Jew and of Avenzoar. The author of the woodcut has not taken the trouble to represent the book realistically but has, above all, sought to ensure that the references, through which the scholar articulates his knowledge, are fully recognizable.

The three figures below are obviously patients. They wait for the physician's consultation, each with his basket containing a urinal flask. A great distance separates them from the physician, who is completely absorbed in the written word.

We are faced once more with the dichotomy between theory and practice in pre-Vesalian medicine—a dichotomy explicit in the *quodlibetum* and in the division, as far as anatomical representation is concerned, of one role into the three functions of teacher, *ostensor*, and *prosector*: here it is also explicit in the distance between physician and patient and in the dialectic couple book/patient. It is the book (or rather the text signifying intellectual work) that determines the significance of the physician's attitude toward the patient and the corpse in all these examples.

The book appears and disappears, changes use, moves from hand to hand in these images. Its connotations vary according to its movements. The use



Figure 6. Anonymous, *Petrus of Montagnana*, in J. of Kentham, *Fasciculo di medicina*, Venice 1493.

of the book in the representations is a sign of the relationship between physician and theory. By analogy, the way that the corpse is approached shows the relationship between physician and practice.

In his preface to the *Fabrica*, Vesalius illustrates this dichotomy and reveals his intolerance of it:

The most influential physicians, disposing practise and imitating the ancient Romans (for the first time in Italy) began to teach the attendants how to operate on the sick and followed their practice as architects to do with the builders. . . . And so, as time passed by, the *curandi ratio* [system of treatment] was divided so miserably that the doctors, vaunting the title of physicians, claimed for themselves medical prescriptions and the diet for hidden illnesses, and left the rest of the medical practice to those called surgeons, who were scarcely considered as servants. They shamefully excluded what had been a principal and ancient branch of medicine that on which the investigation of nature had relied on above all else.<sup>8</sup>

8. Vesalius, op. cit., ff. 2r and 2v: "lautiores medici primum in Italia ad ueterum Romanorum imitationem manus operam

He takes up the polemic against the traditional ways of teaching with the same vehemence as the *quodlibetum*:

It had gone so far that these people [the barbers] even kept for themselves the very difficult and secret art [anatomy] entrusted to them and this disastrous loss of the therapeutical branch has also introduced a detestable habit in the *gymnasia*, by which [the barbers] practice dissections on human bodies while [the physicians] describe the parts of the body. Indeed these latter have no experience at all of the business, but having learned by heart matters from others' books they display their learning by croaking with much ado from a high pulpit. The barbers, so unaccustomed to speaking, cannot explain the dissections to the public and so ruin what is necessary to demonstrate following the orders of the physician. The latter, unaccustomed to practising dissections on the human body, with his book arrogantly plays at steering the affair. As in this way everything is badly taught at the *scolae* and time is wasted in ridiculous discussions, in this confusion, the public is shown less than that which a butcher could teach a physician at the market."<sup>9</sup>

The preface of *De humani corporis fabrica* emphasizes the two points that are the essence of Vesalius's innovations: the rehabilitation of anatomy as a practical discipline and the introduction of visual material as a necessary instrument in its teaching. Vesalius often performed dissections both in public<sup>10</sup>

fastidientes, quae in aegris manu facienda ducerent, seruis praescribere, ac illis tantum architectorum modo astare, coeperunt. . . .) Atque ita temporis successu, curandi ratio tam misere diuisa est, ut medici quidem, se physicorum nomine uenditantes, medicamentorum et uictus ad reconditos affectus praescriptionem sibi duntaxat arrogauerint: reliquam autem medicinam, ijs quos Chirurgos nominant, uixque famulorum loco habent, relegarint, turpiter a se quod praecipuum et antiquissimum est medicinae membrum, quodquae naturae speculationi (si modo quod aliud) in primis innititur, depellentes."

9. Ibid., f. 3r: "tantum abest, ut difficillimam abstrusissimamque artem manu ipsis traditam, id hominum genus nobis asseruaret, utque haec pestilens curatiuae partis dispensio detestabilem ritum in Gimnasiis non inuaderet. quo alij humani corporis sectionem administrare, alij partium historiam enarrare consueuerunt. his quidem graculorum modo, quae nunquam agressi sunt, sed tantum ex aliorum libris memoriae commendant, descripta ue ob oculos ponunt, alte in cathedra egregio fastu occinentibus: illis autem adeo linguarum imperitis, ut dissecta spectatoribus explicare nequeant, atque ex physici praescripto ostendenda lacerent, qui manu corporis sectioni nunquam adhibita, tantum ex commentario nautam non snie supercilio agit. Atque ut sic omnia perperam docentur in scholis, ac ridiculis questionibus dies aliquot abeunt, ita quoque spectatoribus in illo tumultu pauciora proponuntur, quam lanus in macello medicum docere posset."

10. Baldasar Heselers notes are an interesting source. He was a

and in private. In the latter case, he would follow a seminar method designed uniquely for his students.<sup>11</sup> That is, he would teach while allowing his students to practice themselves, intending thereby to rehabilitate the *manus opera*.

For Vesalius, as for some of his contemporaries, direct observation became the basis of science and natural philosophy (Vesalius, op. cit., f. 4r) and the essential teaching aid. The use of anatomical illustrations was an extension of this approach. Those without free access to a corpse were thus given a visual and mnemonic instrument that showed the detailed structure of the human body. Leonardo da Vinci, referring to Mundinus's *Anatomia*, had already complained about the lack of illustrations in medical texts:

And you who wish to describe in words man's body and all the details of his limbs, you must forget such a thought, as the more you describe the detail, the more you confuse the reader's mind, removing him from a knowledge of what is described. Therefore one must illustrate and describe.<sup>12</sup>

Indeed, both Berengarius da Carpi's *Isagogae* and his *Commentaria super anatomia Mundini* (Bologna, Benedictus, 1521) were illustrated books. While they can be considered as the immediate predecessors of the *Fabrica*, they do not cause the same outright breach, owing to two essential features of their conception and organization:

1. First, these illustrations are not the products of direct observation but evidently emulate earlier woodcuts, reproducing their mistakes. Some images were merely versions of the works of artists which happened to be suitable for anatomical books (cf. A. Hyatt Mayor, op. cit., p. 91).

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student who had attended Vesalius's public anatomical demonstration in Bologna in 1540. Cf. B. Heseler, *Andreas Vesalius' first public anatomy at Bologna, 1540. An eyewitness report together with his notes on Mattheus Curtius' lectures on "Anatomia Mundini,"* ed. by Ruben Eriksson, Uppsala, 1959.

11. Cf. Ch. D. O'Malley, *Andreas Vesalius Bruxellensis 1514–64*, Berkeley and Los Angeles, 1965, p. 112.

12. Leonardo da Vinci, *Foglio A dell'anatomia*, ed. by G. Piumati, Torino, f. 14v. (It is quoted in A. Parronchi, 'Sulla nascita dell'anatomia artistica,' in *Opere giovanili di Michelangelo*, vol. 1, Firenze 1968, p. 20.) "E tu, che vogli con parole dimostrare la figura dell'uomo con tutti gli aspetti della sua membrificazione, removi da te tale oppenione perche quanto più minutamente descriverai, tanto più confonderai la mente del lettore e più lo removerai dalla cognizione della cosa descritta. Adunque è necessario figurare e descrivere."

2. The text and the images are completely disjointed: the text refers to the illustrations only, sometimes even contradicts them. The book therefore loses any possible interest that the use of instructions might have given it. Captions are simplistic and imprecise, like the drawings. There is nothing to replace anatomical dissection, the observation of primary evidence.

In 1538, Vesalius published the *Tabulae anatomicae* sex, consisting of six large woodcuts illustrating human anatomy and physiology. The plates had been drawn accurately by Vesalius and the Flemish painter John Stephen of Calcar, who had come to Venice to study with Titian and help in his workshop. In the caption adjoining the drawing, the name of every part of the body is written in Latin, Greek, Hebrew, and sometimes Arabic (fig. 7).

These plates represent a decisive step forward in the renewal of medical science and their teaching, which seems to me to overturn all Mundinus's thinking. Images without text replace text without images. The lacunae in Berengarius's work had also been filled. Notwithstanding this, the *Tabulae* follow a strict Galenic observance.<sup>13</sup> Indeed, they show the most complete graphic treatment of Galenic anatomy and physiology. The importance of the *Tabulae* in the history of medicine lies in their use as mnemonic and teaching aids.<sup>14</sup> Easily available to both students and professors, they could be used as synoptic tables for anatomy lessons as well as for private study. As objects, they suggest a wider circulation than that of any preceding medicinal treatise. Moreover, they require a more active and direct participation in anatomical dissections, thus striking a further blow at the *quodlibet* model. Other things also suggest such a change: the

13. For example, in the *Tabulae*, the venous system originates from a five-lobed liver; the coccyx is longer than usual; the sternum is in three parts.

14. In the dedication, Vesalius recalls how he conceived the work and the reason for publishing it: "Not long since . . . when appointed at Padua for the course of the surgical part of medicine, in discussing the treatment of inflammation, I had come to explain the divine Hippocrates and Galen on Revolsion and Derivation and had made incidentally a drawing of the veins. . . . And this figure of the veins so pleased the professors and students of medicine that they pressed me for a similar delineation of the arteries and nerves. Since the conduct of dissections was part of my duty, and knowing that this kind of drawing to be very useful to those attending the demonstrations, I had to accede to this request. Nevertheless I am convinced that it is very hard—nay, futile and impossible—to obtain real anatomical or therapeutic knowledge from mere figures or formulae, though no one will deny them to be capital aids to memory." (Quoted in Ch. Singer, *Some vesalian*, pp. 431–432)

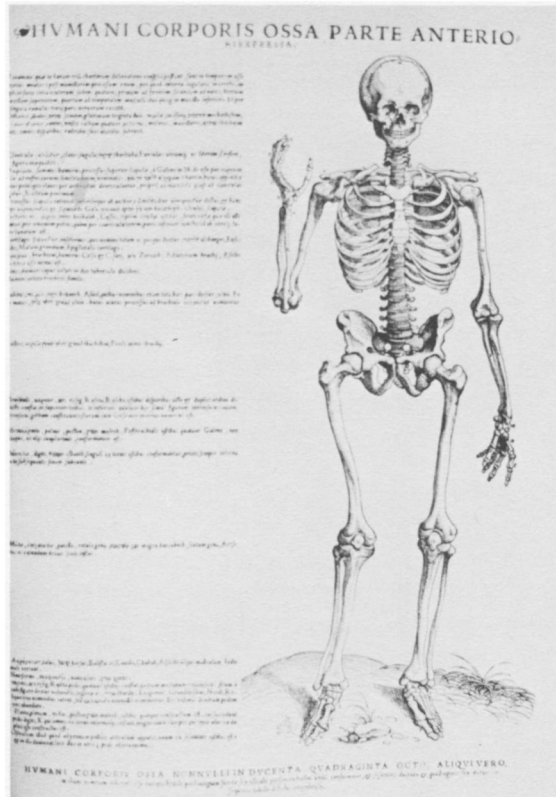


Figure 7. J. S. Calcar, *Humani corporis ossa parte anteriore expressa*, in Andreas Vesalius, *Tabulae anatomicae sex*, Venice 1538.

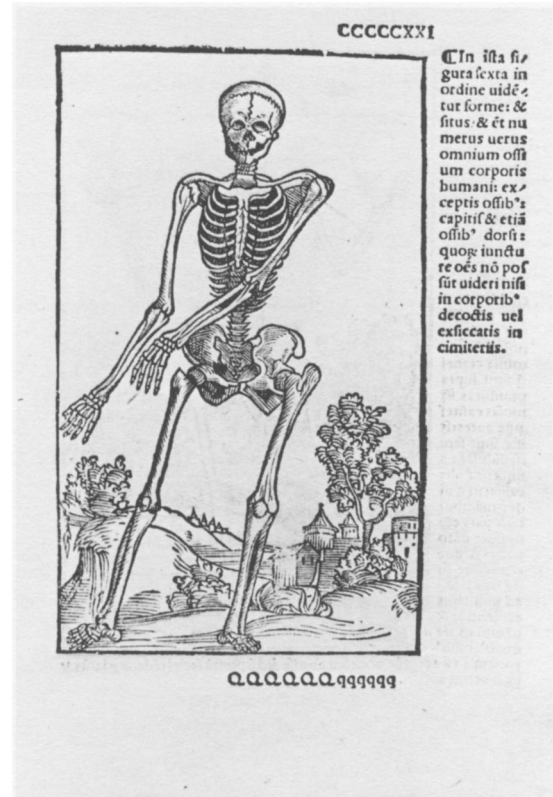


Figure 8. Anonymous, *Skeleton*, in Berengarius of Carpi, *Isagogae breves*, Venice 1535.

teacher himself now dissects the corpse; the book is no longer on the *cathedra*; the space of the dissection is now continuous with that of the scholars.

All these uses and implications of the *Tabulae*, as Vesalius intended, make up their revolutionary character. They departed radically from the medieval canons of anatomical figuration. We need only compare them with the illustrations of the *Isagogae breves* and Charles Etienne's *De dissectione partium corporis humani* (drawn by Mercure Jollat in 1532) to recognize the difference in quality and the change in the attitude to illustration (figs. 8, 9).

In 1543, Joannes Oporinus of Basel published Vesalius's *De humani corporis fabrica*. It is generally agreed that this work opened a new chapter in the history of anatomy and scientific thought in general; it reveals fully the attitude that had only been suggested in the *Tabulae anatomicae*. Vesalius was fully aware of this. Indeed, his publishing enterprise, which was in fact a whole cultural program, did not stop at the

publication of the *Fabrica*. The book was addressed to an educated and restricted audience, even though Vesalius had hoped "quampluribus prodessem" (Vesalius, *De Humani*, f. 4r). At the same time as the *Fabrica* he therefore gave the same publisher an *Epitome*, to appear both in Latin and in German, yet just as precisely worked. It was to serve as a synoptic handbook for the less educated reader, for the barber, for the surgeon (*cerusicus*), as well as all those excluded from the closed academic circle. It was also conceived as an introduction to the *Fabrica*.

Returning now to the frontispiece and its features (this time of the *Fabrica* and the *Epitome* in the 1543 edition) (fig. 10), I shall try to "read" the cultural attitude.

It is one of the masterpieces of sixteenth-century wood engraving. The title page is unusually elaborate, full of the details that signify the revolutionary nature of practical anatomy, as practiced by the author and described in the text. The very power of the image

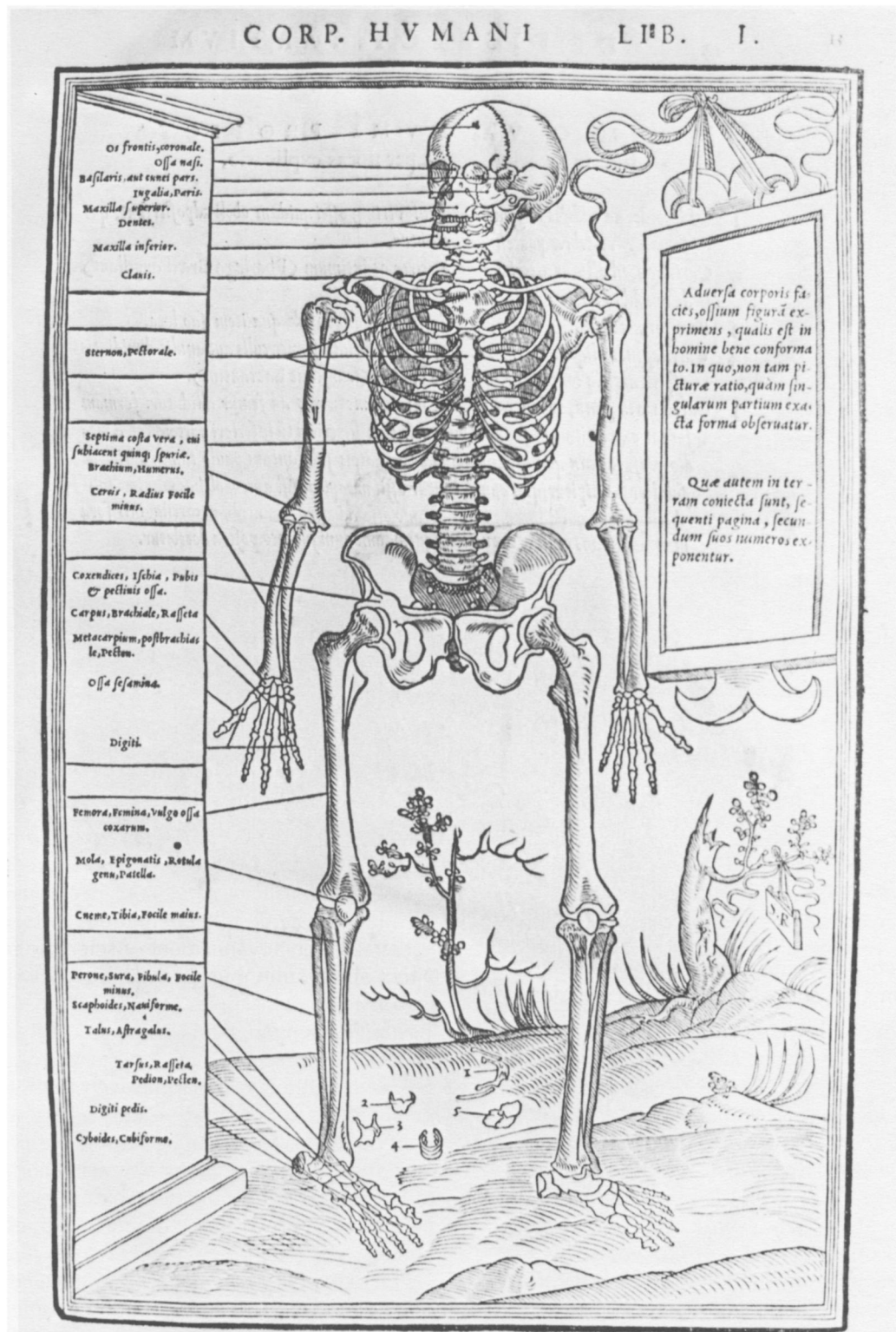


Figure 9. Jollat, *Skeleton*, in Carolus Stephanus (Ch. Etienne), *De dissectione partium corporis*, Paris 1545.

suggests that he was quite aware of its revolutionary character, that he was abruptly proposing a wholly new scientific attitude.

The subject represented is an anatomy lesson open to the public, as might have been witnessed in Padua and other cities at that time. The frontispiece, however, contains several details that hint at a profounder meaning.

The setting is a Renaissance building, perhaps a courtyard.<sup>15</sup> The scene takes place outdoors, as revealed by the plants standing over the first arch on the left: I emphasize this detail since it has been suggested that the setting was an anatomical theater proper,<sup>16</sup> rather than a temporary scaffolded platform, set up specially for the public dissections that Vesalius was obliged to hold according to the university statutes. To consider the setting of the scene as a permanent anatomical theater ignores, first, the historical circumstance: regular public dissections were not performed at Padua University until 1583, and the first Paduan permanent anatomical theatre was not built until 1594; second, to mistake the true meaning of the engraving as the harbinger of a wholly new anatomical practice, which could have no permanent features consequently, least of all such a setting.

An audience of seventy to eighty people crowd the three rows of a wooden auditorium. At the center, the corpse of a woman, with an opened stomach, lies on an anatomical table. The teacher, whose features bear some resemblance to those of Vesalius, in his portrait in the *Fabrica* (fig. 11),<sup>17</sup> is portrayed as a dissector, for the first time in the history of anatomical illustration. A right hand is inserted into the abdomen of the corpse and he holds the *retractor* under his forefinger; he raises his left hand to emphasize his words that accompany the demonstration. The surgical instruments used for the operation are placed on the table; an inkpot, a pen, and a sheet of paper lie next to them. This combination of objects probably symbolizes, whether consciously or

15. Many historians consider that it is probably in the courtyard of the University of Padua, the Bo, that the dissection, represented in the frontispiece, takes place. The same bucrania on the trabeation of this building are seen in the woodcut (M. Muraro e D. Rosand, *Tiziano e la silografia veneziana del Cinquecento*, Vicenza 1976, p. 127). I think that the bucrania are of little proof: they are a cliché of Veneto architecture of that period. They can be seen, for example, on Palladio's Basilica di Vicenza, Convento della Carita and Palazzo Chericati; and in Sebastiano Serlio's architectural treatise.

16. Cf. for example, M. H. Spielmann, *The iconography of Andreas Vesalius*, London 1925, p. 129.

17. It is the only woodcut of the *Fabrica* that can definitely be attributed to Calcar. M. Muraro e D. Rosand. *Tiziano*, Scheda 62.

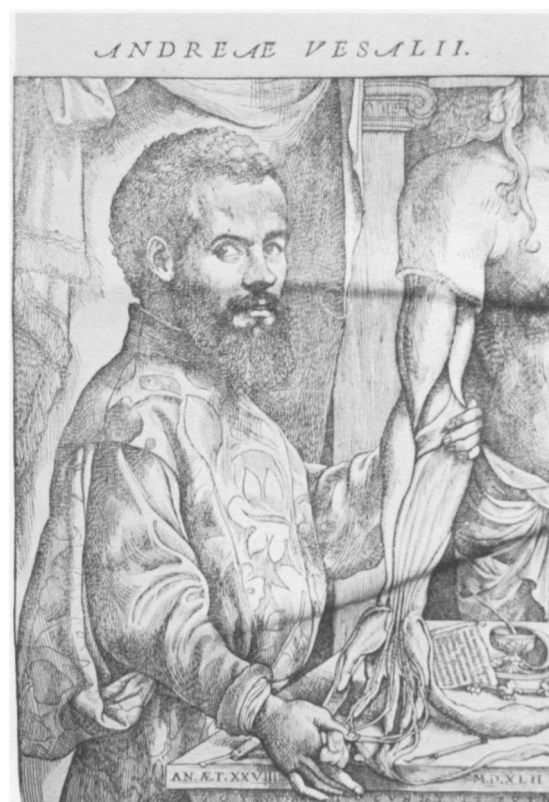


Figure 11. J. S. Calcar (attributed), portrait of A. Vesalius, in A. Vesalius, *De humani corporis fabrica libri septem*, Basel 1543.

unconsciously, that synthesis of theory and practice in medicine, of which I spoke and which also appears in Vesalius's portrait. On the table, next to the flayed arm of a woman, lie the scalpel and the writing tools, both essential to the advancement of scientific research. Direct observation must be recorded in writing immediately.

A large attendance at an anatomical lesson is also a novelty. Teachers, students, guests, clergy, and ordinary members of the public can be identified. From behind the central columns, figures passing by spy discreetly onto the stage. The scene is one of bustle and excitement. The majority of onlookers concentrate on the demonstration. Some of them are involved in discussion, whereas in the *quodlibetum* represented in the previous title pages only the figures in academic gowns participated. Medical knowledge was now open to a larger audience. Lay, common people now attended. The interest in the structure, the *fabrica*, the inside of the human body, had crossed the university frontier. Another feature of the scene shows the

revolutionary nature of the changes that it records. Earlier I pointed out the significance of the presence and the use of the book in the scenes on other title pages. In Vesalius's engraving, the public handles the book: both the student on the left of the skeleton and the bearded figure on the right clasp open tomes, catching the attention of other onlookers; a third book, this time closed, appears in the hands of another figure, in the third row on the right. Clutching the book, he points to the center of the scene as though implying that attention must be focused there and not on the book. His posture suggests, indeed, that the book represents knowledge already acquired. Thus I cannot agree that "the anatomical book has lost its essential place in the anatomical context, although it does not altogether disappear."<sup>18</sup> On the contrary, the fact is that the book does not disappear but changes hands and therefore its function—it complements the figure of the physician who digs into the intestines of the corpse. Another side to Vesalian reform is demonstrated to the reader.

Characters playing privileged roles may be observed in the foreground of the woodcut. These roles are not strictly connected either with teaching or with dissecting but are part of the iconographical apparatus of the frontispieces, and are therefore matter for its interpretation.

1. At the foot of the table, two men seem to be quarreling. One is bent forward. With his left hand placed on the table, he holds a razor that will be used to continue the dissection of the corpse. He seems to be asking his companion to hand him another razor, which he is sharpening. These two barbers are pointedly banished beneath the table and to a task of little importance. Vesalius might have said that this was their rightful place.

2. Still in the foreground, on the right, a man clasps a dog. Dogs' bodies often replaced those of humans in physiological and anatomical research, obviously for comparative use. A bearded man, in the antique costume often associated with Galen, seems to be reproaching the dog's keeper, urging him to turn his attention to the dissection. It is as though he is pointing to the human body as the only source of anatomical knowledge. His gesture follows the same pattern

18. L. Premuda, *Storia dell'iconografia anatomica*, Milano 1957, p. 123. Premuda quotes W. Artelt, 'Das Titelbild zur "Fabrica" Vesals und seine Kunstgeschichtlichen Voraussetzungen' in *Centaurus*, 1950, p. 69: "Il libro anatomico ha perso il suo posto chiave nel quadro anatomico, sebbene non sparisce del tutto."

ascribed earlier to the man with the closed book. Even if it is not meant as a direct reference to Galen, the figure obviously represents the classical tradition; the frequent, polemic references to Galen in the preface of the *Fabrica* seem to suggest a positive identification. For example: "It is certain that he (Galen) never dissected the human body"; "Galen, during a single anatomical demonstration, would make more than two hundred mistakes in the description of the parts, the harmony, the use and function of the human body."<sup>19</sup> Now aware of his past mistakes, he turns to the innovator of the new practice and newly established science.

3. The monkey on the left, which displays his feral nature by biting the hand of one of the onlookers, can also be interpreted in the same anti-Galenic spirit. Once more, the preface contains the clue to the interpretation. It constantly reiterates the fact that Galen dissected monkeys, and that he was not aware of the difference between animal and human structure and morphology. Galen, in any case, vehemently condemned the dissection of the human body.

The appearance of the monkey brings to mind Titian's *Caricature of the Laocoon*. H. W. Janson has given a reading of this curious woodcut, treating it as part of the debate between such Galenic physicians as Sylvius, Vesalius's *magister* in Paris, and Vesalius himself. Discovered in 1506, the Laocoon group, perfect in its anatomical details, has been transformed by Titian into one of three shrieking monkeys.<sup>20</sup> It was a pictorial insult directed at the conservatism of Galen's contemporary followers. This interpretation of Titian's woodcut has been used as evidence of his involvement in the execution of the anatomical woodcuts of the *Fabrica*.

It is almost as if the figures in the foreground of Vesalius's frontispiece were pointing to the polemic against anatomical practice, were set there so as to introduce a representation of the new public dissection. Exactly the same scheme is found in the preface to the *Fabrica*: polemical motifs against medical tradition are developed from the recto of the second page to the end of the verso of the third page, while the rest of the

19. "Nunquam ipsum (Galen) reseccuisse corpus humanum"; "multo saepius quam ducenties a vera partium humanae harmoniae, usus functionisque descriptione, Galenum declinasse, in unius Anatomae administratione." Cf. A. Vesalius, *De humani*, f. 3v.

20. H. W. Janson, "Titian's Laocoon Caricature and the Vesalian-Galenist controversy," *Art Bulletin*, 1946, pp. 49 ff. and *Apes and ape lore in the Middle Ages and the Renaissance*, London 1952, pp. 355 ff. Cf. Ch. M. Bernstein, "Titian and the anatomy of Vesalius," *Bollettino dei Musei Civici Veneziani*, 1977, pp. 46–49.

preface contains the real presentation of the book, explains the spirit of Vesalius's work, and includes the dedication to Charles V.

Other details in this frontispiece are more enigmatic: for example, the skeleton with his magisterial wand, who stands above the table at the center of the scene. Vesalius attached enormous importance to the reconstruction of the skeleton, considering it an indispensable exercise for anyone who studied medicine. In 1536, he conducted such a reconstruction at Louvain. In 1538, he did the same in Padua with the bones of a young woman; he gave that skeleton to the University of Bâle when he visited the city on the occasion of the publication of his treatise. Furthermore, one of the initial letters of the *De humani corporis fabrica*, decorated with caricatures of medical art, represents three putti absorbed in reconstructing a skeleton (fig. 12). Here I cannot say more than that the presence of the skeleton prompts some thoughts about the sustaining framework of the human body: it is at once the final reduction of anatomy and the basis on which all medical knowledge rests.

The frontispiece for the second edition of the *De humani corporis fabrica* was redrawn in 1555. The content was slightly altered, but the general meaning was left intact, although the quality of the cutting and the style of the drawing have changed noticeably. Muraro and Rosand (op. cit., p. 128) have well defined the change in climate:<sup>21</sup>

I have already mentioned Calcar and Titian's presumed collaboration in the preparation and execution of the *Tabulae anatomicae* and the iconographical material of the *De humani corporis fabrica*. It is difficult to separate who did what. Nor should Domenico Campagnola's contribution to these works be neglected: the decorated initials and the background landscapes of the *Tabulae musculorum* of the *Fabrica*, as well as a drawing for the frontispiece (now in the Huntington Library in San Marino, California) have been attributed to him.<sup>22</sup>

Although I cannot consider precise attributions, I should still like to stress that important Renaissance artists were involved in the creation of the most important anatomical treatise: books crucial in the history of science and of publishing as well as in the history of art. Indeed, Donatello and Pesellino (as well as other artists) have represented their versions of the



Figure 12. D. Campagnola (attributed), initial letter "P" of treatise on intestines in A. Vesalius, *De humani corporis fabrica libri septem*, Basel 1543.

"Miracle of the miser's heart," which was modeled on anatomy lessons that they must have seen, although they had no connection to any scientific body.

It is well known that artists were becoming increasingly interested in anatomy toward the end of the sixteenth century. What is surprising, therefore, is how little most art historians have concerned themselves with this essential aspect of sixteenth-century artistic culture. They have considerably left the problem to historians of medicine.

Artists had begun to dissect corpses at the same time as, or perhaps even before, physicians. Hidden in their workshops, they would secretly cut and flay the bodies in order to discover their *fabrica*. They worked in secret, as moral and religious sanctions prevented them from practicing in the open and they lacked the scientific authority guaranteed to physicians.

That is why so little is known about the artists' anatomical work. There is no information on Donatello, although he certainly attended dissections. However, according to Vasari (who was always attentive to this aspect of the artists' work), Antonio Pollaiuolo (1429–1498) practiced anatomy:

He was more modern in his understanding of the nude than any of his predecessors had been; and he flayed many men in order to inspect their anatomy. He was the first to demonstrate how to find the muscles, which in his figures had [a] form and order. He carved a battle representing these [bodies], girded with a chain.<sup>23</sup>

21. G. M. Muraro and D. Rosand, op. cit., p. 128.

22. Muraro and Rosand consider this sketch to be the original of the woodcut. Ibid.

23. G. Vasari, *Le vite dé piu eccellenti pittori, scultori et architettori* (1568), ed. by C. Milanesi, Firenze, 1878–1885, v.III, p. 295: "s'intese degli ignudi più modernamente che fatto non

Vasari is obviously referring to the *Battaglia dei deici nudi* (fig. 13). The *Lotta dei due nudi* (Victoria and Albert Museum, London) and the *Martirio di San Sebastiano* (National Gallery, London) also confirm Pollaiuolo's preoccupation with anatomical details, with the figures' proportionate musculature and the realistic portrayal of their gestures. However, Pollaiuolo was not the only artist to apply himself to anatomical investigation. Written sources, as well as the works of Mantegna, Verrocchio, Leonardo, Luca Signorelli, Michelangelo, Titian, and Raphael, reveal a concern with the body that involves much more than the outer skin and superficial morphology.

Myology was the only branch of anatomy to play a really crucial role in the representation of the human body (both still and in movement). Artists, however, were venturing beyond the study of muscles towards a dissection of the whole cadaver.

A change in attitude toward the human body thus occurred simultaneously in both art and medicine. Both in the workshop and in the studio, the body, investigated both from the outside or the inside, became the pretext for shared work. Vesalius had sought the collaboration of Calcar and Titian in the illustration of his works. Leonardo da Vinci, working on several dissections with Marc'Antonio della Torre, planned and drafted an anatomical treatise in one hundred and twenty books. Michelangelo Buonarroti and Realdo Colombo also shared ambitious projects.

The collaboration of these last two has provided written and iconographic clues that lead to yet another frontispiece. I shall point out particular features that illustrate their relationship, beginning at the dissecting table and culminating in an unrealized program for an illustrated anatomical treatise.

In 1493 Michelangelo was commissioned by Niccolò Bicchiellini, Prior of Santo Spirito in Florence, to work on a wooden crucifix for the higher altar of his church.

He was on such good terms with the above Prior that he received much attention and was provided with a room and bodies for anatomical use. Nothing could have given him more pleasure. This was the beginning of the anatomical work that he pursued as long as fortune allowed him to.<sup>24</sup>

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avevano gli altri innanzi a lui; e scorticò molti uomini per veder l'anatomia lor sotto; e fu il primo a mostrare il modo di cercare i muscoli; che avessero forma et ordine nelle figure e di quelli tutti, cinti d'una catena, intagliò una battaglia."

24. A. Condivi, *Vita di Michelangelo Buonarroti, Pittore, Scultore,*

And, as long as he was able, he continued to perform dissections for the rest of his life, both on animals ["particolarmente de cavagli"] and on humans, to such an extent that those who "were professional, knew scarcely as much as he did: that is, regarding knowledge necessary for the art of painting and sculpture; not regarding the details that the anatomists observe" (ibid., pp. 45–46).<sup>25</sup> Furthermore, his artistic production bears witness to his immense knowledge of human morphology, or rather of myology and muscular physiology. In every gesture that he wished to represent, he had meticulously studied the corresponding muscles. He had even planned to write and illustrate a treatise, describing "i moti umani et apparenze," in order to complete Albrecht Dürer's *De Symmetria*, a book that had never satisfied him.<sup>26</sup> He had discussed this project with

Messer Realdo Colombo, a most excellent anatomist and physician, and a friend of Michelangelo and I: who thus sent Michelangelo the dead body of a young and handsome moor. Michelangelo showed me many rare and secret things on this body and that were perhaps never heard of again, all of which I have noted.<sup>27</sup>

Realdo Colombo was born in Cremona, probably in 1520. He had been a pupil of Vesalius in Padua and in 1544 succeeded him in the chair of anatomy. Realdo was uncompromising in his criticism of his teacher,

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*Architetto e gentilhuomo fiorentino pubblicata mentre viveva dal suo scolare Ascanio Condivi, Firenze 1746* (I ed., apud Antonio Blado, Roma, 1553), p. 9: "Ebbe col detto Priore molta intrinseca pratica, si per ricevere da lui molte cortesie, si per essere accomodato e di stanza e di corpi, da poter fare notomia, del che maggior piacere non se gli poteva. Questo fu il principio, ch'egli a tal impresa si messe, seguitandola finchè dalla Fortuna concesso gli fu."

25. Ibid., pp. 45–46: "ne fan professione, appena altrettanto ne sanno: parlo della cognizione, che all'arte della Pittura e della Scultura è necessaria: non dell'altre minuzie, che osservano i Notomisti."

26. Ibid., pp. 49–50, and the *Notizie storiche ed annotazioni di Anton Francesco Gori*, p. 117. On Michelangelo's opinion on Dürer's *De symmetria partium in rectis formis humanorum corporum*, Condivi writes: "So bene che quando legge Duro gli par cosa molto debole; vedendo con l'animo suo quanto questo concetto fosse per essere più bello e più utile in tal facultà. E a dire il vero, Alberto non tratta se non delle misure e varietà de' corpi, di che certa regola dir non si può, formando le figure ritte come pali: e, quelchè più importava, degli atti e gesti umani non ne dice parola."

27. Ibid., p. 50: "Messer Realdo Colombo, notomista e medico cerusico eccellentissimo, ed amicissimo di Michelangelo, e mio [Condivi]: il quale per tale effetto gli mandò il corpo morto d'un moro, giovane bellissimo e quanto dirsi possa dispostissimo. (. . .) Sopra il qual corpo Michelangelo molte cose rare e recondite mi mostrò, forse non mai più intese, le quali io tutte notai."

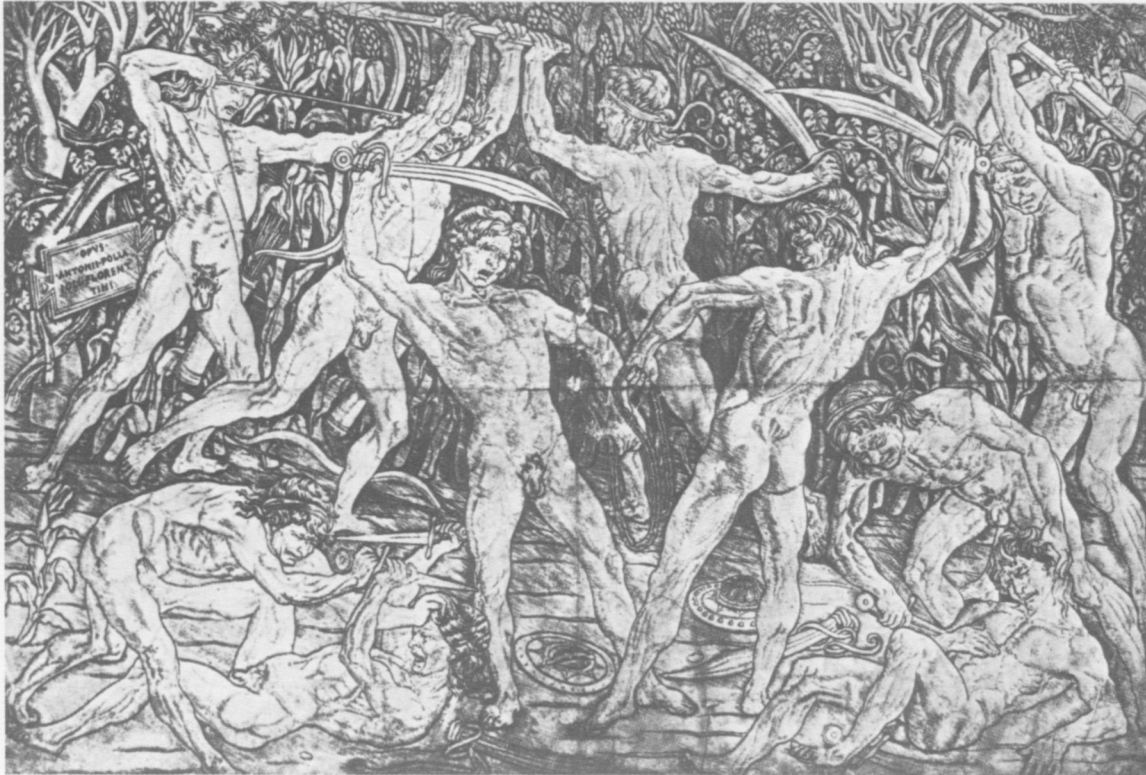


Figure 13. A. Pollaiuolo, *Battle of the Ten Nudes*, engraving, London, Victoria and Albert Museum, 38.3 × 59.5 cm.

often correcting him, both to his face and in writing, when the results of his research seemed to prove Vesalius wrong.<sup>28</sup> In 1546 he taught at Pisa, and in 1549 he served at the pontifical court of Paul IV. But already in 1548, Realdo, reproached by Cosimo de Medici, justified his absence from the University of Pisa, in a letter from Rome dated April 17th. It was at that very time that he began

to compose a work, that shows [the students] the truth and allows them to study while practising anatomy, as I have seen the difficulties they face in the study of Galen— whose works are very long and very faulty. Similarly, as I have demonstrated many times in public, Vesalius is prolix and faulty.

Further on, Realdo asks Cosimo if he can remain for a longer time in Rome:

28. Cf. Realdo Columbus, *De re anatomica libri xv*, Venetiis, ex Typ. Nicolai Bevilacqua, 1559, pp. 101–102, 104, 132, 214, 221, 235, 254–255, 260, 300, 319, 344–349, 405, 442, 447. (Cf. R. De Maio, *Michelangelo e la Controriforme*, Bari and Roma 1978, p. 443, n. 103.)

both because fortune has presented me with the opportunity to make use of the best painter in the world, and because of the large number of available bodies. One must keep one's hand in the bodies, to understand the matter and to contradict the ancients and moderns.<sup>29</sup>

The work alluded to by the physician would be the *De re anatomica libri XV*: the painter is Michelangelo Buonarroti. Realdo was the doctor both of Michelangelo and of Cardinal Ridolfi. According to

29. The letter is at the Archivio di Stato di Firenze in *Carteggio universale di Cosimo*, f. 386, c. 258. It is quoted in A. Parronchi, *Michelangelo e Realdo Colombo*, in *Opere giovanili*, v. II, pp. 193–194. “in componere una opera, per la quale abbino la veritate de la cosa, et che si possa, mentre che si fa l'Anatomia, studiarla; vedendo io il danno che ne patiscono nel studiare Galeno: il quale, oltre che longo è mendosissimo; medesimamente il Vesalio è prolisso, et patisce non puoca menda, si come in pubblico più volte ho dimostrato.” Further on, Realdo asks Cosimo if he can remain for a longer time in Rome: “si perchè la fortuna mi apresentava il primo pittor del mondo a servirmi di questo, si per la gran copia de' corpi nelli quali bisogna quasi decontinuo haver li la mano, per considerare bene le cose; et questo per havere da contraddire e alli antichi et alli moderni tutti.”

Alessandro Parronchi, Cardinal Ridolfi was probably the patron of the publishing enterprise.<sup>30</sup> Yet the treatise was published posthumously, without illustrations by Niccolò Bevilacqua, in 1559 in Venice.

What was to have been such a promising collaboration had somehow failed. Here, as in the *Fabrica*, we are faced with a series of problems. *De re anatomica* had been conceived as an illustrated work. This is evident in Realdo's letter to Cosimo de Medici but also makes obvious sense; after the *Fabrica*, an anatomical treatise without a large corpus of illustrations was inconceivable—above all, a treatise that sought to correct and surpass Vesalius's work. Realdo Colombo's trump card was to have been the high artistic value of the detailed image, which project consisted in supporting his arguments. They would also have been effective teaching aids. Between the letter of April 1548 and the death of the physician, what prevented the fulfillment of the project for this work? In his biography of Michelangelo, Ascanio Condivi writes:

He stopped dissecting bodies; the handling of bodies over a long period of time had upset his stomach, so that he could no longer eat or drink.<sup>31</sup>

Is this why Michelangelo deserted the project?

In the *De re anatomica*, neither the original project nor even the name of Buonarroti is mentioned. The preface, however, notes the usefulness of such a treatise for artists. And a surprise is hidden in the frontispiece (fig. 14).

Thirteen figures are gathered around the corpse of a muscular young man, tragically posed on the dissecting table. His stomach is opened and we can glimpse his intestines. The architectural features that frame the scene suggest the transept of a church, with the corpse placed on an altar. But the bas-reliefs (showing military ornaments) that decorate the higher part of the building and the nude statue in the niche on the right of the apse suggest that the place might be a civil building, perhaps the courtyard of a palace.

The scene again represents an anatomy lesson. The audience consists only of students (beardless figures), bearded physicians, and teachers; figures directly

30. Ibid., pp. 195–196. Cardinal Ridolfi was extremely interested in anatomy: “fu lui che spinse Guido Guidi (Vidus Vidi) a tradurre le opere greche di chirurgia que lui possedeva.”

31. Condivi, op. cit. (Vita), p. 39. “lasciò di tagliar de' corpi; conciossiachè il lungo maneggiargli di maniera gli aveva stemperato lo stomaco, che non poteva nè mangiare nè bere, che pro gli facesse.”



Figure 14. Anonymous, title page of Realdus Columbus, *De re Anatomica libri XV*, Venice 1559.

involved in the demonstration performed by the dissector, who is at the center of the scene. This might be Realdo Colombo himself. Holding a scalpel in his right hand, he works directly on the corpse, as had Vesalius. Furthermore, anatomy is again conducted on a seminar model, in which everyone makes a theoretical or even manual contribution.

However, the woodcut does not appear to have been intended as a representation of the ways in which anatomy lessons were conducted, in contrast to the frontispiece of the *Fabrica*, which derived its importance from its revolutionary and innovative character. Colombo's frontispiece shows dissecting procedure calmly, as an accepted protocol, without invoking the polemical and assertive allegories to heighten its meaning.

The importance of the frontispiece of the *De re anatomica* lies not in the representation of anatomical practice but in details depicted around it. I shall refer to three of them.

1. The first is the man consulting a book on the left.

The presence of the book on the anatomical stage is certainly nothing new, but this representation differs from the ones that were described earlier. We can glimpse simulated writing and a drawing of a man with a raised arm. For the first time, the book is realistically depicted, allowing us to recognize its content; it is no longer to be identified by its shape or by the author's name or title, as in Pietro da Montagnana's frontispiece. This particular book is obviously an illustrated anatomical treatise. What use of the book did Colombo wish to represent? Two hypotheses are plausible, even compatible. The first is that Realdo uses the book to compare the results of an investigation that he was conducting with his assistants, one of whom had the task of checking corresponding and contradictory results between the written text and the dissection. (The book might be the *De humani corporis fabrica*: at least four of the *tabulae musculorum* show the figure with the same posture.) Furthermore, I have already emphasized that Realdo was anxious to correct "la non puoca menda" of the Vesalian text. The second hypothesis, which I am inclined to favor, is that reference to the illustrated book had become an irreplaceable part of anatomical practice ("che si possa, mentre che si fa l'Anatomia, sudiarla"). It may even have been intended to show the book that Realdo proposed to publish.

2. Below on the left of the frontispiece, a seated figure is drawing on a tablet. He is the artist responsible for preparing the sketches for the woodcuts that will illustrate the *De re anatomica*. His presence on the anatomical stage hints at a more complex meaning than that of a banal representation of an anatomy lesson.

3. The third detail is perhaps the most surprising, and I shall venture an interpretation. The putto in the foreground, taking the hand of the figure on the far right, seems to be urging him to do something. The figure's gesture might be one of modesty, surprise, or reluctance.

In Renaissance allegorical images, the putto is often used to explain the allegory of the image. Leon Battista Alberti refers to this in *Della Pittura*. My hypothesis is that the putto is taking the hand of Michelangelo Buonarroti: there is a striking resemblance between the figure in the frontispiece and numerous portraits of the artist. Furthermore, it is not the first time that Michelangelo is placed by an anatomical table. For example, the *Lezione di anatomia per artisti* attributed to Bartolomeo Passarotti (Galleria Borghese, Rome) and two drawings of an unknown artist (one in the Louvre

and the other in the Ashmolean Museum, Oxford)<sup>32</sup> show him next to an anatomical table.

The putto is urging and encouraging Michelangelo to replace the seated artist in executing the text's illustrations. The link between the two artists is made by the four pens that the putto holds in his left hand and his position in the scene.

These details are in the foreground, the significant space in the woodcut. The rest, the context of the frontispiece, is the straightforward performance of anatomy. They suggest a comment on Realdo's and Michelangelo's failed collaboration: it is an allegory of regret. Although Michelangelo's name is not mentioned in the text, his figure appears in the most prominent position. But even without invoking Michelangelo, the woodcut represents the inexorable necessity for visual material in anatomical treatises. Thus, despite the obvious contradiction, the *De re anatomica* sets the seal on a praxis begun by Vesalius.

I hope that I have been able to show clearly enough that frontispieces may provide precious evidence for the historian who has relied too much on written documents in the past. The books I have examined are practical manuals that register actions and the sequences of gestures, scientifically arranged as an indispensable antecedent of their production. They originated in the observation of a body dissected by a skillful hand; these gestures are the matter that the books organize so that the texts often provide the necessary instructions for the correct practice of anatomy. Between text and gesture there is the cadaver, and a protocol through which the cadaver becomes the source of scientific knowledge and of scientific form.

Visualizing the body both as a whole and in detail, as well as the gestures that were performed on it, marks the step allowing anatomy to enter modernity. This is the reason I decided to focus my interest on images (as long as they were the counterparts of given gestures), and especially on title pages, in order to study the historical evolution of anatomy.

The text of a treatise on anatomy indicated the scientific development of the discipline. However, the

32. Louvre, Inv. N. 844 e K. Th. Parker, *Catalogue of the collection of drawings in the Ashmolean Museum, Oxford* 1956, pl. 480. M. T. Malato has recognized Michelangelo in Passarotti's picture (M. T. Malato, *Michelangelo anatomico*, in *Atti del I convegno della Marca Fermana di storia della medicina*, Fermo 1955, p. 5, pl. 5–6). He has also been recognized in the Louvre drawing by E. Steinmann (E. Steinmann, *Die Portratdarstellung des Michelangelo*, Leipzig 1913, pp. 80–81).

text hid the factors that made this development possible and defined the status of anatomy; it also ignored many concurrent events. All this remained untold. The text was often too self-conscious as a result of a compulsive effort at scientific precision. The protocol of scientific and academic production forced written expression to ignore those elements of the context that were not an integral part of that production.

Somehow the everyday image of himself that the physician gave, crystallized as the image of the performer of public dissections in the anatomy room: it became the place and the *figure* of medical practice. I have tried to describe it here from the context of medical books. As I have already implied, while the text was subject to many preconditions, the frontispiece could present a more complete and accurate image of medical practice, in both its conscious and its unconscious aspects. The practitioner therefore appears much more lively in the frontispiece than in the text. The frontispiece performed a wider function therefore than that of a preface or an introduction. The image of a man who carefully searches the bowels of a corpse loosely lying on a table can tell much more than any data about the length of the intestines. The frontispiece opens the book, yet stays outside it, and contains clues for possible hypotheses about what the text does not specifically state. Therefore, it can be regarded as the indispensable complement to the text; it represents some of the circumstances and relationships that played a role in the *mise-en-scene* of the practice of anatomy. On the one hand, it presents the imperative terms of reference for any analysis of the evolution of anatomy; on the other hand, it provides clues to a story that took place outside a strictly medical context.

The corpse, released from its status of object to be preserved in memory of the soul that dwelt in it, became the object of a scientific cult, as well as a locus of the production of knowledge. The people surrounding Vesalius's dissection table in the frontispiece of *De humani corporis fabrica* seemingly responded to the appeal of *nosce te ipsum*, with no traces of macabre curiosity. The same attitude characterizes the plates accompanying the text, with their off-hand representation of flayed bodies.

The development of anatomy allowed the body to be liberated: its secrets could be revealed before large audiences, including *in primis* those who had chosen it as the subject of their artistic production. It seems that the representation of the human figure began to respect proportions and forms at the same time as the laws of perspective (*perspectiva* after all means "to see



Figure 15. Pierfrancesco Alberti, *Academia de' Pittori*, engraving, New York, Metropolitan Museum of Art.

through") came to rule the representation of visual space. The artist became a "dissector," even if not a professional one.

Physicians themselves had recourse to the collaboration of artists when it was necessary to visualize the structure of the human body. When it was no longer enough to rely on the spoken or written word, the image acquired a new status.

In the frontispiece of *De re anatomica* the artist appears on the scene as an integral part of the image. He is no longer hidden behind his drawing, but takes part in the event. His appearance was a declaration of the necessity for the simultaneous presence of the physician and the artist on the scene of anatomical knowledge, at the very source of its production. It was the symptom of a change; the artist stepped into the limelight of the anatomy treatise.

Anatomy had become a fundamental, although auxiliary, part of artists' knowledge; in the past they had performed their dissections secretly and—like Leonardo da Vinci—had kept the corpses in their bedrooms, well hidden from prying, inquisitive eyes. In the latter sixteenth century, artists relied increasingly on anatomical research, which had brought about a great change in the very status of the corpse. The books I have examined made it possible to depict the artist a few years later holding a scalpel or searching for the bowels of a corpse with his hand (fig. 15).

(Translation by MARINA ENGEL)