

Editorial

Evolution of Anatomy Drawings from 14th to 16th Century

The human body has been depicted in ancient cave-paintings, in primitively sculpted figures, and through all the ages in various forms of artistic expression.¹ The earliest medical texts were descriptive but not illustrated. Even in the 14th century, the need for anatomic pictures was so slight that Mundinius (1316 A.D.) published his famous and much-used manual of human anatomy without illustrations and without ever even referring to any.² Later, as it became clear that knowledge of the human body and all its systems was essential to the practice of healing, texts were accompanied by illustrations which became an integral part of the teaching process.³

In 1396 two hundred years before Vesalius, the Persian author Mansur ibn Muhammad composed a treatise on anatomy that summarized many of the observations of Galen. It was the first such

treatise to be accompanied by drawings of the human body in anatomical detail.⁴ His illustrated treatise is often called Mansur's Anatomy (Tashrih-i Mansur-i). The treatise consists of an introduction followed by five chapters on the five "systems" of the body: bones, nerves, muscles, veins, and arteries—each illustrated with a full-page diagram.⁵

The first printed anatomy book was published in Venice in 1492. A Latin translation of a work by a little known German physician named Johannes de Ketham, it was planted firmly in the medieval medical tradition.⁶ The book, which included treatises on subjects such as bloodletting, urinoscopy, and dissection, became an important teaching text, but its sumptuous woodcuts were also geared toward an audience of wealthy intellectuals. A major success, it was republished in 1493 with new illustration showing contemporary medical scenes including a dissection, and it appeared in twelve editions within a decade.⁵

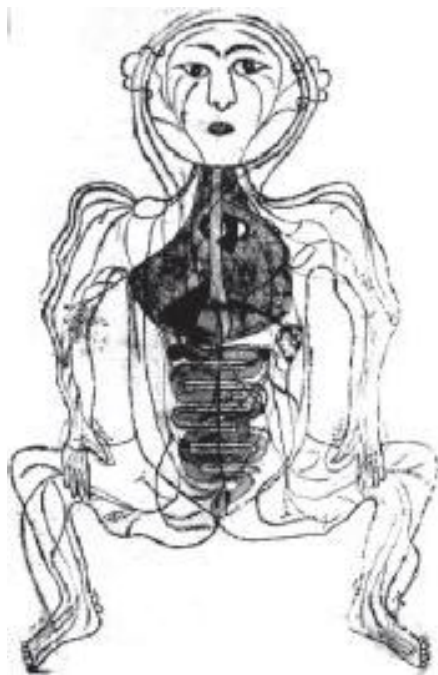


Fig.-1: This drawing, illustrating the nervous system, from *Tashrih-i Mansur-i*—composed in 1396.

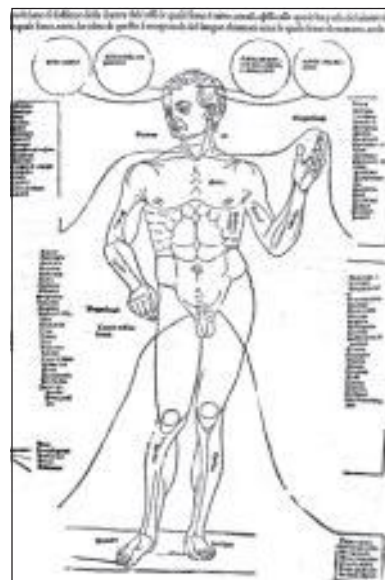


Fig.-2: Johannes de Ketham, *Fasciculo de medicina*, 1494.

Magnus Hundt's *Antropologium*, published in 1501, serves to explain the body not only anatomically and physiologically, but philosophically and religiously too. *Antropologium* contains 17 woodcut illustrations of human anatomy. The illustrations are schematic, rather than accurate depictions.⁵

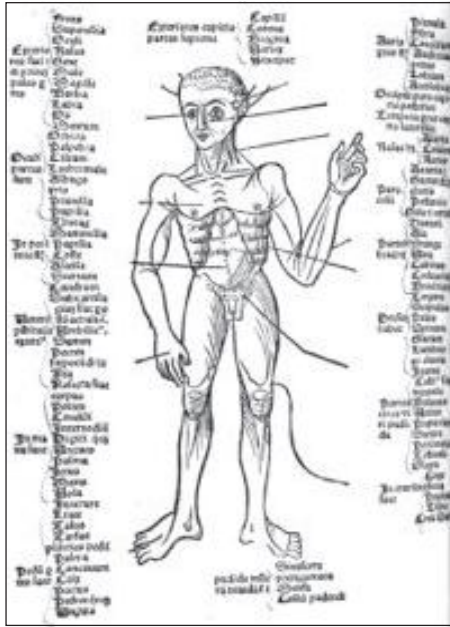


Fig.-3: Magnus Hundt, *Antropologium*, 1501.

Art and anatomy have been closely related since the Renaissance. Artists inspired by Greek and Roman statues created naturalistic representations of the human figure aided by their own dissections of cadavers.⁷ In terms of Renaissance anatomy, the two names most closely associated with the progression toward critical analysis and accuracy are Leonardo da Vinci and Andreas Vesalius.⁸

Da Vinci is widely considered to be one of the greatest artist-anatomist of all time and perhaps the most diversely talented person ever to have lived.⁹ Leonardo's formal training in the anatomy of the human body began with his apprenticeship to Andrea del Verrocchio, his teacher insisting that all his pupils learn anatomy. As a successful artist, he was given permission to dissect human corpses. Leonardo drew many studies of the human skeleton and its parts, as well as muscles, the heart and vascular system, the sex organs, and other internal organs. He made one of the first scientific drawings of a fetus *in utero*.¹⁰



Fig.-4: This anatomical drawing was from Leonardo De Vinci's anatomical notebook. 1510-1512.

Jacopo Berengario da Carpi (1460–1530) was an Italian physician and he made several important advances in anatomy including the first anatomical text augmented by illustrations, "*Anatomiam humani Corporis*". He is widely recognised as the most important anatomist before Andreas Vesalius.

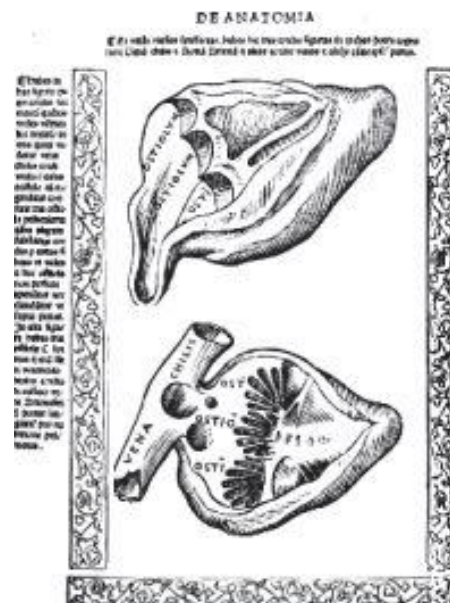


Fig.-5: Jacopo Carpi, *Anatomiam humani corporis*, 1523.

This book emphasized the sensory over textual versions of the truth, an emphasis on dissection of human cadavers, some first denials of Galenic anatomy based on personal experience in dissection. For example, he denied the existence of Galen's rete mirabile. Later Vesalius claimed *he* was the first to do so.⁵

Gersdorff, Hans von published *Feldbüch der Wundartzney*, or *Fieldbook of Surgery* (i.e., "Wound Doctoring"), in 1517. This book was extremely popular and served as one of the most basic surgical texts in Europe for a number of years. The *Feldbüch* contains four woodcut anatomical images, including a bloodletting figure (with internal organs exposed), "Wound Man," a skeleton, and another figure showing internal organs (the "viscera-manikin").⁵

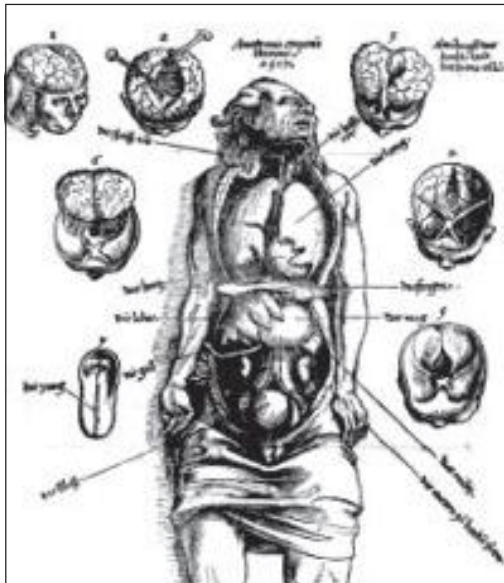


Fig.-6: Gersdorff, Hans von, *Feldtbüch*, 1528.

Vesalius's *De corporis humani fabrica libri septem*, (published in 1543) is one of the most influential medical texts ever printed, not only because of the scientific methods used to produce it, but because of the artistic renderings of the anatomist's findings.¹¹ Although he relied heavily upon Galen, at times translating his words exactly, Vesalius performed his own careful dissections and observed the body in great detail, confirming and refuting many of Galen's anatomical and physiological tenets.¹²

The famous woodcut illustrations of *De fabrica* influenced the depiction of anatomy for centuries and were often copied outright. Vesalius was once thought to have been the sole illustrator, but subsequent scholarship has shown that the work is that of several different artists. While Vesalius certainly performed many of the sketches himself, the unknown artists are now only known collectively as "the workshop of Titian." In the anatomy illustrations, the human figures depicted are placed in Paduan landscapes, striking classical poses and holding objects (an apple, a spade, a skull).⁵ As Kornell writes, Vesalius gave his anatomical figures a "sense of inner life" that served to "humanize the skeletons and downplay the aspect of horror and wonder an animate skeleton naturally evokes".¹³

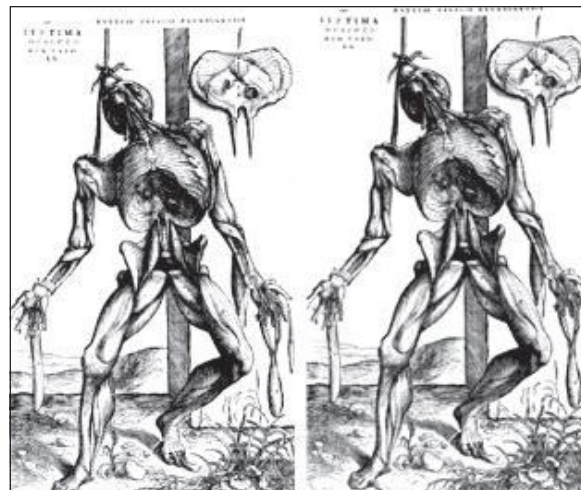


Fig.-7: Andreas Vesalius, *De Fabrica*, 1543.

Charles Estienne took an early and avid interest in anatomical dissection and began preparing a monumental anatomical text in the 1530s with surgeon, anatomist, and artist Étienne de la Rivière (d. 1569). A majority of the work was complete by 1539. But, the book "*De dissectione partium corporis humani libri tres*" was eventually published in 1545. Had the work come out in 1539 as originally planned, it may have eclipsed many of the notable firsts which Vesalius' *De fabrica* garnered with its publication in 1543.⁵

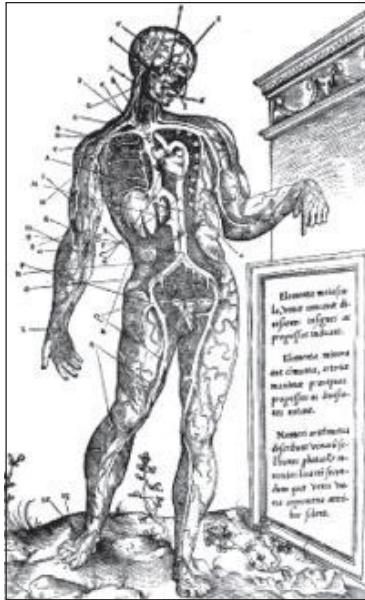


Fig.-8: *De dissectione partium corporis, 1545.*

Valverde's most famous work was *Historia de la composicion del cuerpo humano*, first published in Rome, 1556. All but four of its 42 engraved copperplate illustrations were taken almost directly from Andreas Vesalius's *De humani corporis fabrica*. Vesalius bitterly commented on Valverde's plagiarism, accusing him of having performed very few dissections himself. Occasionally, however,



Fig.-9: *In this 1559 anatomical plate by Juan Valverde, a figure holds a knife in one hand and his own skin in the other.*

Valverde corrected Vesalius' images, as in his depictions of the muscles of the eyes, nose, and larynx.⁵ One of Valverde's most striking original plates is that of a muscle figure holding his own skin in one hand and a knife in the other, which has been likened to Saint Bartholomew in *The Last Judgment* (Michelangelo) of the Sistine Chapel.¹⁴

In 1552, Eustachi, with the help of Pier Matteo Pini, a relative and an artist, prepared a series of forty-seven anatomical illustrations for a medical treatise. Since Eustachi mentioned forty-seven plates in the *Opuscula anatomica* but actually made use of only eight of them in that work, the remaining 39 seem to have been lost after his death and were sought for long and unsuccessfully - by Marcello Malpighi, among others. Ultimately the missing thirty-nine engravings were discovered in the early eighteenth century - after 162 years - in the possession of a descendant of Pier Matteo Pini. The series of plates contains depictions of muscles, bones, the abdominal structure, the thorax and the vascular system. Particularly notable is *Tabula XVIII*, displaying the base of the brain and the sympathetic nervous system.¹⁵

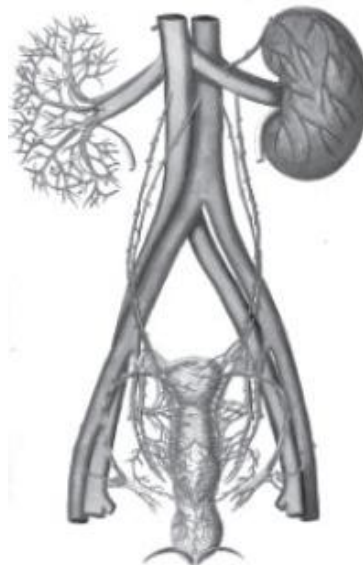


Fig.-10: *Bartholomeo Eustachi, Tabulae anatomicae, 1552, published in 1783.*

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