

LEONARDO DA VINCI Corpus of the Anatomical Studies at Windsor Castle

...do not busy yourself with things belonging to the eyes by making them enter through the ears for you will be far surpassed by the painter...Leonardo da Vinci (1452-1519)

In October 1517 while visiting Amboise (a small town in the Loire Valley) Cardinal Luigi 'Aragona, accompanied by a chaplain and a secretary named Antonio de Beatis, were entertained in the studio of Leonardo Vinci the Florentine, who at the time was painter, engineer and architect to King Francis I. de Beatis later recorded in his diary that ...'*this gentleman has written in great detail on anatomy, with illustrations of the members, muscles, nerves, veins, joints, intestines in a manner that has never yet been done by anyone else*'. Fast forward to 1773, when the physician and anatomist William Hunter after examining de Vinci's anatomical drawings in George III's library, later wrote that...'*I expected to see little more than such designs in Anatomy as might be useful to a painter in his own profession. But I saw, and indeed with astonishment, that Leonardo had been a general and deep student. When I consider what pains he has taken upon every part of the body, the superiority of his universal genius, his particular excellence in mechanics and hydraulics, and the attention with which such a man would examine and see objects which he has to draw, I am fully persuaded that Leonardo was the best Anatomist, at that time, in the world ... Leonardo was certainly the first man, we know of, who introduced the practice of making anatomical drawings*' (Two introductory letters. London 1784). Despite these ringing endorsements, and the publication in 1796 of seven sheets of drawings by John Chamberlaine, the Keeper of the King's Drawings and Medals (who was encouraged in this endeavour by the Hunter brothers, William and John), the wider academic world only became aware of da Vinci's anatomical drawings and papers when a series of facsimile editions were published between 1898 and 1916. Why did da Vinci prepare so many anatomical drawings? What happened to them on the long journey from Amboise to an English monarch's library?

It appears that da Vinci had intended to write a comprehensive treatise on the nature of the human body, embracing structural anatomy and what we now recognise as physiology. To that end over the course of his life he accumulated hundreds of densely annotated sheets crammed with sketches of bones, muscles, nerves, vessels and viscera together with extensive notes exploring the mechanics of movement and the actions of the heart. Many of these sketches were based upon his own cadaveric dissections (and observations of other dissections) and on inferences drawn from his experimental studies on animal tissues, principally dissected ox hearts. His first studies of the human figure may have been as early as 1480, but his own references to dissections performed in the hospital of St Maria Nuova in Florence date from after 1500. During the winter of 1510-1511 it is thought that he may have dissected together with the anatomist Marcantonio della Torre in the medical school in Pavia, completing some 30 dissections. Della Torre died of the plague in 1511 and da Vinci subsequently abandoned his projected Treatise on Anatomy. His anatomical drawings were far in advance of any other contemporary anatomical drawings, for example compare them with the 'situs' figure in Peyligk's *Philosophia Naturalis Compendium* (1499): in their detail and composition they anticipated the topographical anatomy displayed many years later in Vesalius' iconic *De Humani Corporis Fabrica* (1543). However, very few were aware of their existence.

Da Vinci bequeathed his notebooks and drawings to Francesco Melzi, the pupil/assistant who lived with him at Amboise. Melzi died around 1570: some twenty years later his son sold the majority of Leonardo's papers to Pompeo Leoni, court sculptor to the king of Spain.

Leoni took the loose papers, now bound into folios, to Madrid. By 1630, the volume containing the anatomical sketches had been acquired by Thomas Howard, 2nd Earl of Arundel, presumably from the estate of Leoni, who had died around 1608. By 1690, the bound papers were recorded as being in the possession of Queen Mary II: there are varying reports that they were owned by Charles I and/or by Charles II in the intervening years. For the next 200 years, they remained in the Royal Library virtually undisturbed, thankfully surviving the Whitehall Palace fire of 1698. In the nineteenth and early twentieth centuries, facsimile editions of da Vinci's anatomical papers were published, at last bringing his work to a wider audience. In the 1970s, a programme of conservation was started at Windsor Castle to record and safely remount each page of anatomical drawings so that the individual folios could be viewed from both sides. Selected drawings were exhibited in London in 1977 and later in Florence, Hamburg, Mexico City, Adelaide, and Melbourne, and a much larger exhibition was held at the Queen's Gallery, Buckingham Palace in 2012.

The entire series of anatomical drawings was published in facsimile: Keele K & Pedretti C (1978-1980). *Leonardo da Vinci: Corpus of the Anatomical Studies in the Collection of Her Majesty the Queen at Windsor Castle*, 3 vols, Harcourt Brace Jovanovich, New York. The English language edition, which includes a full transcription of da Vinci's mirror writing, consists of two volumes of text and a Solander box of facsimile drawings. The Anatomical Society of Great Britain and Ireland (as the Anatomical Society was then called) acquired copy number 40 of 998 published sets (of which 970 were for sale). The three volumes were lodged in the library of the Royal Society by Professor John Harris in the early 1980s. It would appear that knowledge of their existence slowly disappeared from the ASGBI's collective memory until 2004, when the Royal Society reminded the ASGBI that it still held them. ASGBI Council agreed that the volumes should be returned to the Society and '*..placed in the Library of a University in which there was an Anatomy Department...*'. Professors John Fraher and Susan Standring arranged that the volumes would be held on behalf of the ASGBI in the Gordon Museum, Hodgkin Building, Guy's campus, King's College London. Today, the three volumes are stored individually in bespoke acid free storage boxes in the Archive Room of the Gordon Museum, where they are available to view by prior arrangement with the Curator of the Gordon Museum, Mr William Edwards (william.edwards@kcl.ac.uk).

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