Science, art and technology in italian anatomical museums

Riccardo de Sanctis

Visitors with no medical or specific background to Europe's many Anatomy or Anthropology Museums, many of which open to the non-specialized public, may experience a feeling of apprehension when faced with mummified corpses and anatomical specimens such as fetuses and monstrosities, or in general with human remains. "Culturally sensitive material" as it has been denominated.

The feeling of unease grows as they realize (apart from ethical issues) that parts of the human body – heads, limbs, crania, skeleton and bones of every type – are displayed in a spectacular rather than scientific way. That is to say, without that ascepticity which today is an almost inevitable part of science and rational knowledge.

Visitors are at the same time confronted with death, or rather the somehow familiar records of death, which can be disturbing. It is natural to wonder why and when these collections first came about, what their purpose was, if they are still useful or if they are just a reminder of a different era of medicine.

This is the goal of this number of *Nuova Museologia*.

The anatomy lesson of Doctor Nicolaes Tulp, Rembrandt, 1632. (Photo Wellcome Collection CC BY London UK)

In the following essays some of the main historical and ethical issues will be dealt from different points of view by curators of some of the most significant Italian collections. The following lines are an introduction to give a general view of the history of anatomical and anthropological museums. In particular to help readers not particularly specialized on the subject.

In 1632 Rembrandt painted a dissection and entitled the picture *The anatomy lesson of Doctor Nicolaes Tulp*. The Flemish painter's subject was the annual dissection ceremony which took place in Amsterdam at the end of January. The painting shows the beginning of a dissection which last four or five days and was attended by three to four hundred spectators. That year, according to various reports, the French philosopher Descartes was present for the dissection of Aris Kindt, who had been executed that day.

It is a sign of the era. This picture is the synthesis of a long battle. It had taken the anatomists two centuries to turn their discipline into "one of the accepted spectacles of early modern Europe" (A. Wear, *The western medical tradition*, Cambridge, 1995, p. 292).

Changes in mentality are important, as the privileged classes overcome anthropological taboos and religious resistance and come to accept anatomy, providing dissections are performed only on the corpses of criminals or poor people without families, as a mark of the anatomists's professional distinction and the modernity of medicine (Le Breton, 1993, p. 95).

This change must be understood if the introduction of the earliest anatomical collections in the second half of the 16th century is to be explained. Much is owed to artists for this rebirth and fascination with the structure of the body. It is well known for instance that Leonardo da Vinci and his master Andrea Verrocchio, Raffaello, Michelangelo and Dürer, to name only the most famous, personally carried out dissections. This practice, of which the general public was aware, probably contributed to the increasing popularity of anatomy.

The artist's rediscovery of the body is also adopted by the Counter Reformation culture, which uses anatomy as a subtle instrument useful for the rediscovery of God, the body of man becomes a "land of edifying discovery and devout mission, a tangible and immobile New World open to meditation and exploration" (Camporesi, 1991, p. 111). Anatomy is also adopted "by the Catholic intellectuals and the ecclesiastic culture to underline the most extraordinary miracle the divine might have performed: the creation of man" (Camporesi, 1991, p. 120).

Drawings become an important part of Anatomy texts: the publication in 1543 of *De humani corporis fabrica* by Andrea Vesalius, a young Belgian doctor who trained in Padova, marks a turning point. For the first time, at least officially, a doctor opens up a corpse with his own hands and tries to understand and describe the workings of the body. Until that time a "sector" (frequently a barber) would cut open the body while an "ostensor" pointed out the various dissected parts, and the doctor, sitting at some distance, high up on his chair, would read out and comment on a classic text, generally by Galen.

An analysis of the illustrations in the "Fabrica" of dissected and skinned corpses clearly shows that the idealized conception of the human body – dominant until the Renaissance – as a continuum of the Cosmos subject to astral influences, had been left behind. The corpse used for public dissections ought to be as "normal" as possible so other bodies might be compared to it. With Vesalius begins the history of anatomy as a positive science. Gradually dissections develop into a real cultural event for the intellectual and privileged classes, frequently transformed into fashionable "moral" shows. Anatomy becomes one of the most advanced science and is an important component of secular and religious culture for at least two centuries. The human body becomes the ultimate visual compendium.

From* De humani corporis fabrica *paintings of Jan van Calcar, 1543. (Photo Wellcome Collection London UK)

In the 16th century medicine experience a process of renewal that looks beyond the classic texts and introduces new ones, with more precise knowledge of the body and the conviction that anatomy has a central role in the process. In reality practical medicine changes at a much slower pace, but on a theoretical level, the anatomists' studies provide a far more complete and accurate picture of the body in its entirety and the organs that it comprises. However, the birth of modern anatomy, knowledge of the body and its most hidden ravines and the journey of discovery to new internal worlds presuppose an important distinction relating to the dead body, the corpse.

Dissection imposes a clear division between the body and the man; cutting skin, slicing into muscles and dismembering a body means that the corpse is no longer related to the man and his individuality when alive. Le Breton writes that the body "must seem divested of every value, after death which has rendered it useless. The body has become an indifferent cast-off skin, like a used suit abandoned after a departure" (Le Breton, 1993, p. 16). The history of modern medicine, or at least its scientific element, seems to contrast with the medicine and treatments of popular roots and cannot be separated from the history of dissections.

The body as a machine

The first break with Medieval medicine is the discovery of the body as an object, separate from the individual, from his social being and individual history, that leads to the idea of the body as a machine, a space where at a later date signs of illness will be identified.

Anatomy become an important basis to medicine, because adequate treatments can only be fond through a knowledge of the body. Dissection, with its element of practical knowledge – sensory, more tactile than visual – makes anatomy the cornerstone of rational medicine, and is confirmed as a scientific discipline par excellence, used by doctors before surgeons, to impose their "modernity" and to assert their professional supremacy. New medicine is rational and this rationality – it is affirmed – can only be based on an accurate knowledge of the human body, its forms and, some time later, its functions.

Systematic anatomical study is probably the first stage in the long process of constructing modern medicine, that no longer views man as a microcosm of uncertain equilibriums with the universe, but as a body which can fall ill and be treated. The body is imaged as a machine: Descartes is the first to use this strong imagery which remains – with only minor modifications as the simple mechanical device becomes an increasingly complex machine – for a very long time, right up to the

present day. Modern medicine thus assumes a direction with the body in its physical state, making a consequence-laden choice. This is what lead Michel Foucault to write that "To our now worn-out eyes, the human body defines, by natural right, the original space and distribution of illness; a space whose lines, volumes, surfaces and paths are established, according to now familiar geometry, by the anatomical atlas. However, this order of the solid and visible body is nothing but one of the many ways for medicine to put disease in space. Nor without doubt, the first, nor the most fundamental. There are different and more original distribution of ill. The exact superimposition of the "body" of the disease and the body of the sick man is probably only a historical and transitory idea" (Foucault, 1969, p. 15).

It is necessary to understand this choice of medicine, this conception of disease (as a phenomenon localized in a body), and the separation between man-individual and body, in order to explain not only the importance that anatomy assumes as a discipline, but also the birth and diffusion of anatomical cabinets and collections.

In the great process of learning which begins in the 16th century, the so called "natural history cabinets" are born. They are collections for study and research that spring up throughout Europe with the impulse of great journeys on the wave of discovery of new lands, with the introduction of new methods of communication. The Earth – after Copernicus and Galileo – can have its own autonomous geological and natural history. Princes and university professors, doctors and travelers, all sort of inquisitive people, the so-called virtuosi, begin to collect every kind of object.

These collections of travel souvenirs, which are intended to provoke amazement and marvel, are a great mirror, more than inventory, of the world. In these collections, which are often enormous and of many different types, anatomy as a privileged place. The body is the most marvelous of marvels: "there's all of Africa an her prodigies in us…"(Camporesi, 1994, p. 114) wrote the doctor Thomas Browne (1605-1682).

The occasional visitor and the native or foreign scholar can admire the rarities, monstruosities, physical oddities or example of the human structure in the form of anatomical preparations, of the great wonders of the body.

***Another drawing from* De humani corporis fabrica.**
(Photo Wellcome Collection London UK)

These collections are intended to represent the whole natural world: animals are shown next to plants and shells; whole mummies or feotuses are next to collection of minerals; limbs and all kind of human organs, healthy and diseased; and giant bones, kidney stones, unicorn liocorno horns, old coins or works of art, all on display in what would appear to us total and incomprehensible disorder, which is just indicative of a culture which is beginning to discover the world as a field of investigation, observing and recording everything. The creation of the world according to the book of Genesis is no longer enough, as man wants direct knowledge based on his own experience.

Thus experimentation is born, reproducible and quantitative, and with it science in the modern sense. Many naturalists, or rather natural philosophers as they are called at the time, are doctors, and the history of nature still seems to be connected to medicine, since man and his body are still the mirror of the universe. Thus the display of pieces of the human body or of whole bodies in museums is not surprising. Collections are often arranged in the naturalists' homes, with skulls, special shelves and objects hanging from the ceiling, like relics in ancient Medieval churches. Disturbing pieces of corpses are displayed without reserve.

It must be considered that sensitivity towards death and corpses was at the time very different from our own. For examples, Philippe Ariès notes that amongst the French nobility embalming was a normal practice, a custom consolidated in tradition (Ariès, 1992, p. 422). Thomas Green (in *The art of Embalming* published in 1705) deplores the fact that anatomy "is used above all for anatomical preparations" while it was no longer used in "the whole preservation of the human body" (Stannard, 1977, p. 27). In *Le malade imaginaire* Molière writes of Angelique who is invited by her fiancé to watch a dissection, like we might invite someone to the cinema or a concert. "Avec la permission aussi de monsieur, je vous invite à venir voir l'un de ces jours, pour vous divertir, la dissection d'une femme, sur quoi je dois raisonner [...]. Le divertissement sera agréable. Il y en a qui donnent la comédie à leurs maitresses, mais donner une dissection est quelque chose de plus galant" (Act III, Scene V). The anatomy lesson given with a public dissection was, as already

stated, an important social event and would often take place during carnival celebrations, partly because of the weather, since the cold would delay putrifaction. The beau monde, in masks, would gather in anatomical theatres, with refreshment and entertaining conversation, for what was an important event both culturally and socially. In 1497 in Padova tickets were already being sold to people who wanted to watch a dissection: Anatomy as a form of entertainment for payment, came about even before theatre performances.

Many documents testify that young surgeons of the 18th century would often complain of the scarcity of corpses to dissect, in their opinion the result of rivalry between independent dissectors, naturalists and experimentors, unconnected to medical teaching in universities and the numerous private amphitheatres. (Ariès, 1992, p. 147)

The richest naturalists had personal anatomy cabinets in their homes. The Marquis Raimondo di Sangro, prince of Sansevero (1710-1772), had a famous cabinet in Naples in rooms communicating with the chapel. In the sacristy there are still two skeletons with revealed veins and nerves; it is not known if they are highly skillfull reproductions or the result of some obscure process of anatomical preservation. Ariès cites cases of the home preservation of the bodies of loved ones in alcohol in the 18th century, which he defines as "not entirely exceptional". In 1775, Martin von Butchell, among others, kept the body of his embalmed wife at home until his second wife got fed up. The parents of Mme de Stael, Jacques and Susanne Necker, were preserved in a large tank at home; Mme Necker had personally ordered that her "body was to be preserved in alcohol like a foetus". The Princess of Belgioioso kept the embalmed body of her young secretary in her house, she could not bear to be parted from him; it was discovered by the Austrian police in 1848 (Ariès 1992, pp. 450-451).

A model of anatomical theatre in Padua built in 1594 by the will of Girolamo Fabrici di Acquapendente. (Photo Wellcome Collection London UK)

But "the almost worldly success of anatomy cannot be explained purely by scientific curiosity. It is easy to guess that it responds to the fascination of things which are not clearly defined, at the limit between life and death, between sexuality and suffering, always suspect to the clear moral vision of the 19th and 20th centuries which have placed them in a new category, that of the turbid and the morbid (Ariès, 1992, pp. 430-431).

From the 16th century until the 19th century there is a continual drawing together of Eros and Thanatos: it is enough to observe the satisfaction of the tortured and martyred flesh of holy paintings, or to consider the bloody scenes of theatre, from Shakespeare to Grand Guignol, from baroque literature and poetry. There is a resurgence of sadism, as Ariès notes "unwitting in the 16th and 17th century, confessed and deliberate in the 18th and 19th" (Ariès, 1992, p. 431).

With the regard to the different sensibilities towards death we must remember that – as shown by many literary sources – in the 18th century dried preparations of various parts of the body were worn around the neck or carried in handbags (fingers, ears, etc.) as lucky charms or simply ornaments and sign of distinction, particularly in the case of very well made preparations. The cemeteries were often in the middle of town, and it was normal to see piles of bones, with the bodies of executed people generally left hanging from the gallows for days on end, on show to the public. In another kind of anatomical spectacle poor people, struggling against starvation, would beg for money showing false bloody mutilations or purulent wounds, which were actually strapped on limbs.

There were no doubt customs not only with death, but with the actual corpse, which are entirely foreign to us. Until the 19th century death was also a show, which was certainly morbid but much less disturbing than it may seem to us today.

Naturally history cabinets do not only attract scientists, being places of research and recreation at the same time; visitors are shown the most wonderful things, and the most shocking. The anatomical preparations are often considered the best: mummies, foetuses, dried heads, enormous kidney stones, rare bone malformations, dwarf and giant skeletons. And it is no wonder when you consider that the body and its products and derivatives (urine, earwax, sweat and even distilled corpse) have been attributed with therapeutic and magic powers since the Egyptians.

"Homo homini salus: man was a reservoir of precious medicines for other men when dead and also, still alive, for the extrement and by-products of his body because for various parts and portions we will see how useful they may be to the human health of man" wrote a 17th cen-

tury Lateran canon called Ottavio Scarlatini, archpriest of Castel San Pietro (Camporesi, 1994, p. 14).

The belief in the body gifted with medicinal properties is sustained for a long time. It is enough to consider that Giambattista Morgagni, one of the founders of modern pathological anatomy, was still prescribing cures of oak viscum, oil mixed with earthworm powder and above all "morsel of succinate and human cranium" (Camporesi, 1994, p. 117 and following).

In reality the part of these cabinets destined for natural things was smaller than the space dedicated to the exception, the monstrosities. The dead was to present a picture of the world through its most curious aspects. The taste and fashion for rarities was so great and wide spread that even the most serious scholars were involved.

An example is the English naturalist John Ray who in his 1673 report on his travels in Italy, Germany and France tells how at the museum of the Duke of Modena he had been attracted above all by a "petrified human head" and in the collection of Giacomo Zanoni in Bologna, by three very rare pieces of crystal rock with encapsulated drops of water.

The separation between natural history – today we would say the natural sciences – from medicine has been a long and compless process, and many cabinets in which botany is alongside anatomy are set up by doctors or pharmacists (like Francesco Calzolari in Verona and Ferrante Imperato in Naples).

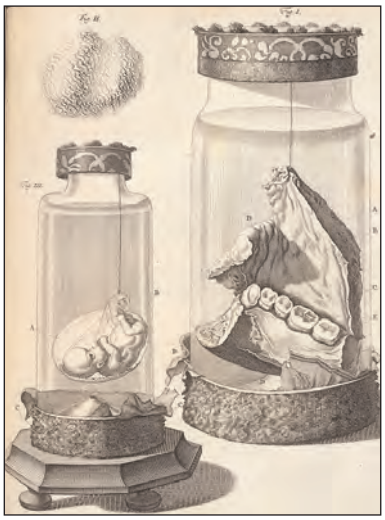
Ulisse Aldovrandi, a doctor and scientist from Bologna, collected, among other things, all kind of mineral an vegetable substances from which medicines could be extracted, but his aim was to study them "not as a doctor, as was the more widespread custom, but as a philosopher" (Olmi, 1993, pp. 242-247).

But where did these expert collectors find their trophies? Once again! 7th and 18th century literature provides plenty of information.

The famous Danish anatomist Thomas Bartholinus relates, in 1654, the background to one of these anatomical finds. It is the story of the anatomical baby sent as a gift to Cardinal Richelieu. It was a foetus that, according to Ambroise Parè, had been in the mother womb for twenty-eight years. This strange petrified foetus was passed by a Parisian dealer called Preteseigle to the jeweller and goldsmith Gilbert Vautron, who then sold it in Venice, finally ending in the property of King Frederick III of Denmark who called in Bartolini to examine it.

"Petrified" or "stonified" corpses, mythological animals (unicorns, basilisks, manucodiate), abortion and little monsters, sought after, hard fought, handsomely paid, were travelling from one corner to the other of wealthy Europe, from Prague to Naples, from Bologna to Florence, from Paris to Modena, from Rome to Venice" (Camporesi, 1991, p. 134).

Hydrocephalies, giant dwarfs, cripples, or the victims of a particular illness, all those who had the misfortune to suffer from a serious imperfection became the prey of unscrupulous doctors and surgeons who anxiously awaited their death in order to claim the body. Such was the case of the Irish giant O'Brien who was more than two metres tall, spied on until his death by the agents of the famous English anatomist John Hunter (1728-1793), who having obtained the corpse by subterfuge, stripped it of flesh and boiled it, to prepare the skeleton. This was not an isolated episode. In 1741 in Dublin, the body of another giant named Magrath, was stolen by the collaborators of a surgeon called Robinson; and doctor Liston (1794-1847) of Edinburgh, claimed the body of a young hydrocephalus man against the wish of his family, and donated his skeleton to an anatomical museum.



Drawing of an anatomical diorama of Frederik Ruysch,* Thesaurus primus, Opera omnia anatomico-medico-chirurgica huc usque edita, *Amsterdam 1727.* *(Photo Wellcome Collection London UK)

The hunt for corpses to dissect for primarily, but not exclusively, scientific purposes, resulted in a number of scandals, particularly in England and in the United States. In order to regulate the issue the English parliament voted in 1832 the "Anatomy Act" which specified precise regulations for the supply and use of corpses.

One problem which was not easy to solve was the preservation of organic finds. Previously the main objects for preservation were skeletons, or dried mummified bodies or skins according to the ancient customs, particularly of the Church, which would keep the remains and organs of saints as relics. Numerous writings from the Middle Ages onwards include instructions for the preparations of balms for use in the preservation of bodies. At the start of the 17th century new methods were being experimented, like large containers full of aqua-vitae or brandy for the submersion of the animal or organ to be preserved. This method was soon to be used on aborted foetuses and whole bodies. The earliest recorded experiments of this kind took place at the Royal Society of London in 1662.

The method was not widely used because of the elevated cost of the alcohol and glass containers. Another system that became widespread in the mid 17th century was the injection of special liquids, often with a metal base, into the veins. Leo-

nardo da Vinci had already experimented with this technique on various animals in order to make the position of the organs clearer. Anatomists adopted various mixes, frequently using metal or coloured wax as the base substance.

Regneir De Graaf (1641-1673) used this method to study the route of the veins, which helped him in his discovery of the ovarian follicles.

The main problem was how to prevent the liquids coming out of the veins. Dutch microscopist Jan Swammerdam (1637-1680) overcame this problem by injecting a hot wax-based liquid which solified as it cooled.

The master of the time for his corpse preservation and highly spectacular preparations was Frederik Ruysch (1638-1731), who perfected the technique of injecting liquid wax into the blood vessels and succeeded in bringing to light even the most delicate ramifications. His methods – still a secret – resulted in perfectly preserved bodies.

Ruysch, a professor of anatomy in Amsterdam, became famous all over Europe. In 1666 he was sent the body of the English admiral Berkeley to preserve. The result was so exceptional that the English government of the time asked for the officer's embalmed body. "All that had been injected preserved the consistency, elasticity, flexibility and even improved with time, as that the colour became, up to a certain point, more vivid. These corpses, some with all their internal organs, do not smell at all; on the contrary, they take on a pleasant smell, even though they smelt a lot before the operation" (Fontanelle quoted by Le Breton, p. 456). Historian Charles Darenberg expressed a rather less positive opinion of Ruysch in his *History of the medical science* published in 1870. He wrote that "he followed sick people less to cure them than to dissect their corpses, and discover the normal or pathological structure of organs and tissues [...]" (Daremberg, 1870, p. 680).

Drawing from* Opera omnia*, Ruysch. (Photo Wellcome Collection London UK)

Ecorché Le cavalier*, by Honoré Fragonard. (Wikimedia Commons, Free media depository)*

Ruysch's anatomical cabinet, with skeletons and bodies arranged in an elaborate composition, is visited by travellers from all over the world. In 1698 Tsar Peter the Great of Russia was so struck by the preparation of a baby that he could not refrain, it is said, from embracing him. Approximately twenty years later the same Tsar bought the whole anatomical collection and the tireless Ruysch began a second.

In the second half of the 18th century, the brothers John and William Hunter of London prepared corpses using paints, resin and wax. Their collection is very famous, comprising more that thirteen thousand specimen.

There are many anatomical collections in Europe (and in this magazine we review some) and they originate, as we have seen, for many different reasons: curiosity, scientific research, the wordly desire to amaze, artistic interest. It is worth mentioning the collection of Honoré Fragonard (1732-1799), cousin of the painter, who was a "professor and demonstrator of anatomy" in Lyon. The 1795 catalogue of his collection of comparative anatomy (at Alfort in France) lists 3033 pieces. There are straw-stuffed animals, skeletons, organs preserved in alcohol, foetuses, monstrosities and models of skinned bodies. Many are preserved using drying processes, others with a special technique of injection-corrosion in the blood vessels and the organs. A technique which Fragonard chose never to reveal.

The anatomical waxes

In the late 17th century, ceroplastic was introduced in Italy, possibly make up for the lack of corpses to dissect or simply because it is a more practical method to teach anatomy. The art of anatomical waxes probably derived from Italian craftsmen's experience in creating votive offerings. The waxes are extraordinary realistic, and were first used above all in teaching anatomy, surgery and by the late 18th century, obstetrics, which was being developed at the time. Wax models became extremely fashionable.

You can follow the fascinating story of two important collections in the essay about the anatomical waxes ordered by the Viceroy of Sardinia Carlo Felice of Savoy to the Florentine Museum of La Specola through the good offices of the Sardinian anatomist Francesco Antonio Boi (Riva A. and Loy F.) and in the essay about the Museum Luigi Cattaneo in Bologna (Ruggeri A., Armocida E., Galassi, F., Leonardi L., Nicoli Aldini N.) From the early 19th century natural history cabinets and anatomical collections were organized according to a new order and even their function changed: "it is no longer a profusion of "singularities" that nature offers to the attention of man" (Lemire, 1992, p. 162). Collections were now used primarily for teaching. Following the collections of rich virtuoses the next step was to make public collections, destined to train young doctors. Diderot's Encyclopaedia entry "Cabinet d'histoire naturelle" said that (such a cabinet) "est fait pour instruire, c'est là que nous devons trouver en detail et par ordre ce que l'univers nous présente en bloc".

This change in the function and organisation of cabinets (that we can start referring to as museums) is caused on one hand by the new taxonomical approach, and on the other hand by what today is defined as anatomical-pathology.

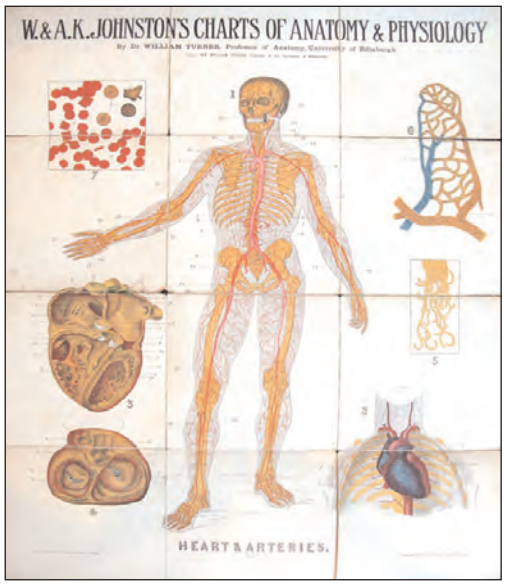
From the second half of the 18th century mere inventories of the world are no longer enough, there is a necessity for order, the classification of all that can be classified. There is a quest for a method to organise the ever increasing number of specimens from the animal and vegetable world that great explorers like Cook and Bougainville, and many other travellers, are collecting around the world.

First the Swedish doctor Karl von Linné (1707-1788) with his binominal taxonomical system and later Buffon, with his *Histoire Naturelle* (1766), supply the instruments necessary for this attempt to rationalise natural history.

Another important factor that contributes to the change, primarily in the use of anatomical collections, is that medicine is being taught in radically different ways by the start of he 19th century. Medical studies are unified with that of surgeons following, and as a result of, the French Revolution.

The publication in 1800 of *Traité des Membranes* by Francois Xavier Bichat (1771-1800) shifts attention from organs to the tissues that form them, and deals with histological changes resulting from illness. Anatomy, from this moment on, studies not only the forms but above all the pathologies of the body tissues. Descriptive and nosographical medicine which brought together the syntoms of an illness (the *Nosographie philosophique* by Philippe Pinel is published in 1798) supports a medicine based on anatomy to understand and above all locate the illness. Anatomy museums opened in London in 1780, in Amsterdam in 1789, in Leiden in 1793, in Berlin in 1796 and subsequently in Vienna, Florence and Naples. A few years later museums open in the United States.

In the second half of the 19th century natural history and medicine traditions move closer once again, thanks in part to the great turning point of evolutionism and the introduction of new disciplines such as experimental biology. This posed new problems, often ethical, which are discussed in the essay about Anthropology as a natural science by Silvia Soncin, Maria Luana Belli and Giorgio Manzi.



An example of anatomical chart developed by anatomist Sir William Turner in the first decades of the 20th century and printed by the cartographical firm of W. & A.K. Johnston. (Photo Wellcome Collection London UK)

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References

Ariès P., 1992 - *L'uomo e la morte dal Medioevo ad oggi.* Mondadori, Milano.

Camporesi P., 1991 - *Le officine dei sensi.* Feltrinelli, Milano.

Camporesi P., 1994 - *La carne impassibile.* Garzanti, Milano.

Daremberg C., 1870 - *Histoire des sciences médicales: comprenant l'anatomie, la physiologie, la médecine, la chirurgie et les doctrines de pathologie générale depuis les temps historiques jusqu'a Harvey.* 2 voll., J.B.Baillière et fils, Paris.

Foucault M., 1969 - *Nascita della clinica.* Einaudi, Torino.

Le Breton D., 1993 - *La Chair à vif. De la leçon d'anatomie aux greffes d'organes.* Éditions Métailié, Paris.

Lemire M., 1992 - *L'image et la science.* Atti del colloquio di Avignone CTHS. Paris.

Olmi G., 1993 - *From the marvellous to the commonplace: notes on natural history museum.* In: Mazzolini R. (ed.), *Non-verbal communication in science prior to 1900.* Olschki, Firenze, pp. 242- 247.

Stannard D.E., 1977 - *The Puritan Way of Death.* Oxford University Press, Oxford.