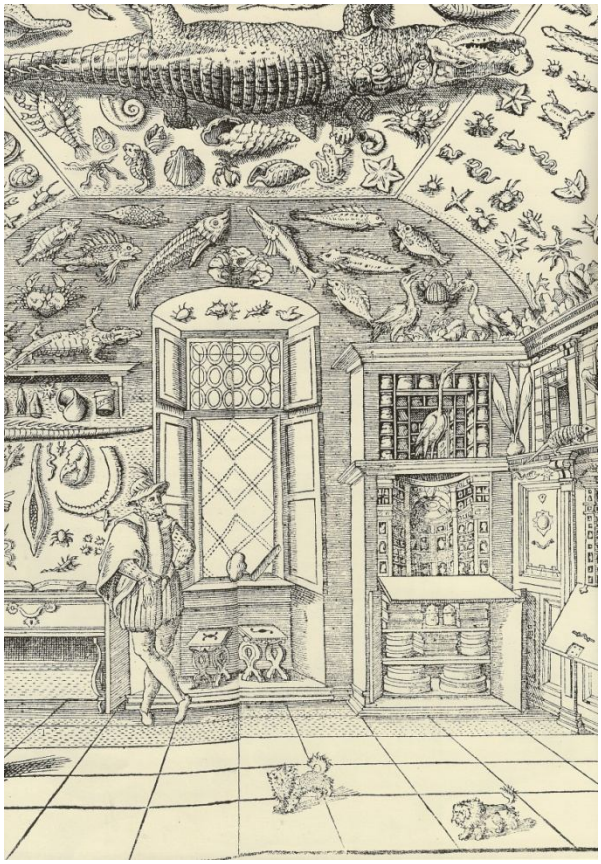
First Museums

"Accumulation, definition, classification - such was the three fold aim of the earliest cabinet of curiosities." [1]



Cabinets of Curiosity (or Curiosities) came into popular use starting in 15th century Renaissance Europe. They were originally rooms filled with all type of objects from nature, from antiquity, and from the art world. Eventually these collections would be stored in elaborately modeled cabinets, full of drawers and shelves of different sizes and shapes. Today's modern furniture analogy would be a curio cabinet. Very large cabinets of curiosities, with massive numbers of specimens, eventually became the base collection for many of the world's great public museums. Physicians, merchants, nobility, and royalty were the many kinds of citizens that would collect and build cabinets to display their collections.

In Germany in 1550, *Kunstkammer* ("Chamber of Art") was first used to describe these collections. Also used was *Wunderkammer* ("Collection of Marvelous Things") to describe collections more populated by objects from the natural word, such as fossils, mineral formations, and animal and plant specimens. Eventually the two words were joined and were used as *Kunst-und Wunderkammer* ("Cabinets of Art and Wonder"). Cabinets became increasingly popular as the printing press came into wide usage (allowing publication of catalogues displaying all of a collector's unique treasures). The newly expanding mercantile class, benefitting from New World trade, provided wealth to purchase items from around the world. Expeditions to North and South America, Asia, and Africa sent many ships back to Europe full of natural history merchandise for collectors.

"Collectors are ruled by one law, and one law only, that of the pursuit of the unique, the distinctive, the unique." [2]

Princely Passions

Not only did wealthy merchants and the nobility succumb to the collecting passion, but so did many royalty. Although most royal collections concentrated on antiquities and works of art, many were still well stocked with natural history objects. Rulers used the *Kunst-und Wunderkammers* to demonstrate imperial magnificence, power, and wealth.

"Curiosities were the pride and joy of the nobility and small fortunes were spent amassing collections." [3]

Francesco I of Tuscany, Charles I of England, Frederick III of Denmark, Peter the Great of Russia, Rudolph II, Holy Roman Emperor -- all collected and established dynastic cabinets of curiosities. Even the Vatican developed a large collection overseen by Michele Mercati (1541-93) for Pope Sixtus V. The collection was made up of fossils, prehistoric tools, and mineral formations.

In Germany, at the Hapsburg court of Austria, collecting was reserved for kings and princes only. In other parts of Europe, the cabinet collection craze peaked in the 18th century. Paris had 17 private collections in 1742, 21 in 1757, and 60 by 1780. All of these collections, both private and princely, engaged collecting agents around the world to send unique and distinctive items to their collections.

"Over the course of centuries intrepid naturalists shipped many boat loads of stuffed, pressed, pickled, and live plants and animals across the Atlantic to fill the 'cabinets of curiosity' in noble homes and the collections of early museums." [4]

Medical Curiosities

Dane Ole Worm

Many of the initial natural history collectors had occupations as physicians, apothecaries, surgeons, or pharmacists. Dane Ole Worm (Olaus Wormius 1588-1654 AD) was professor of medicine at the University of Copenhagen. He used his collection of curiosities in his scientific pursuits. Museum Wormianum, a catalog of his works, was published posthumously in 1655. Ole Worm's collection eventually formed the basis for Denmark's National Museum. *(www.nationalmuseet.dk/sw20379.asp)* Wormius also taught Greek, Latin, and physics. Not only interested in the natural sciences, he was a collector of early Scandinavian literature and student of the runic languages.

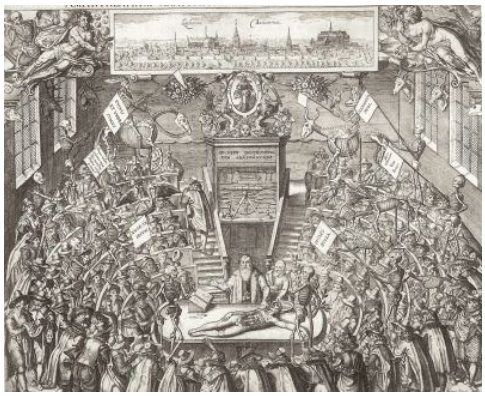
Ferrante Imperato

Ferrante Imperato (1550-1625 AD) was an apothecary who used his collection to research and manufacture medicine. He published his catalog, *Dell'Historica Naturale*, in Naples in 1599. His catalog is the earliest known pictorial record of a natural history cabinet. Imperato travelled throughout Southern Italy making geographical observations. He was also one of the first to correctly theorize how fossils are formed. His collection included plants (herbarium), birds, fossils, and minerals arranged in a display that appealed more to the aesthetic eye rather than any scientific pattern.

Sir Hans Sloane

Sir Hans Sloane (1660-1753 AD) of Britain, who was appointed as Court Physician to King George in 1727, amassed an amazing collection of over 337 volumes of dried plants, 50,000 books and 71,000 objects, most of which were natural history specimens. Sloane promoted the use of quinine to reduce fever and inoculation to prevent smallpox infection. He was also an early promoter of drinking chocolate mixed in milk. His motive for collecting was a driving need to identify and classify all the works of nature and have an example of each in his cabinet. He went to great lengths to identify and name all his specimens and record their number, name, locality and other pertinent details in one of his 21 folio volumes. At his death in 1753, Sloane bequeathed his entire collection to the British nation and it eventually became the basis for the British Museum.

Medical science took a great leap forward in 1543 with the publication of De Humani Corporis Fabrica (Concerning the Construction of the Human Body) by Andreas Vesalius of Padua (1514-1564 AD). He was not content with just learning anatomical knowledge from the classical texts written by Galen of Pergamum (129-217 AD). Rather than learn anatomy from rote memorization of Galenic principles (which were often wrong), Vesalius instead chose to learn through actual examination of human anatomy through cadaver dissection.



To promote his experiential knowledge, he hired artist Jan Steven van Calcar to produce highly accurate drawings of anatomical studies. The book was so revolutionary and impactful it is still in active print today.

Preserved specimens, of both normal and abnormal anatomy, were now highly desired by collectors, not only for their prurient value, but for medical educators to have for teaching and demonstration purposes. Autopsies could not be performed during the hot summer months due to the quick decay of bodies. Preserved specimens thus became the only way to see practical anatomical examples during that season.

In Great Britain, due to religious and social traditions, there were few legal ways for the medical community to obtain the bodies needed for the new surgical training. "Resurrection men" provided the bodies for many anatomy schools by robbing the graves of the newly dead. By the early mid-1700's several great private schools of anatomy were established in Great Britain. Two of the best were established by the Hunter Brothers, William and John.

> ***"The founding secret that lay at the heart of cabinets of curiosities was thus dual in nature: their intention was not merely to define, discover, and possess the rare and the unique, but also, and at the same time, to inscribe them within a special setting which would instill in them layers of meaning. Display panels, cabinets, cases and drawers were a response not only to a desire to preserve, or to conceal from view, but also a parallel impulse to slot each item into its place in a vast network of meanings and correspondences."***[5]

Wealth Of Knowledge

Many of the world's great natural history museums had their beginning in the cabinet of curiosity collections of private individuals. The famous cabinet of Parisian Joseph Bonnier de la Mosson (1707-1744) was acquired by Georges-Louis Leclerc, Comte de Buffon (1707–1788 AD) for the Muséum National d'Histoire Naturelle located in the Jardin des Plantes in Paris.

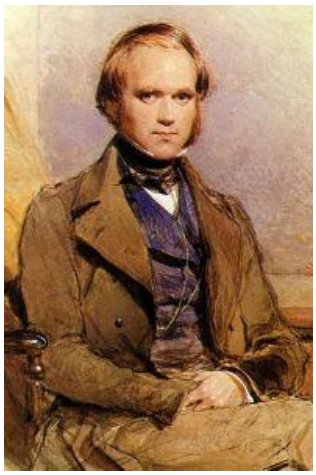
In Oxford, the Ashmolean Museum was built in 1683 to house the collection of botanist John Tradescant (1577-1638 AD). In the last years of Tradescant's life, he opened his collection to the public. At his death his son, Elias Ashmole (1617-1692 AD) expanded and cataloged his collection.

Elias Ashmole

The British Museum began with the collection of Sir Hans Sloane. Over time more rigorous academic standards were applied to the museum's collection with the specimens becoming less of a cabinet of curiosity. Due to Sloane's painstaking attention to cataloging, his collection already had a wide acknowledged scientific value. Unfortunately, not all the collections which the museum acquired were as meticulously researched.

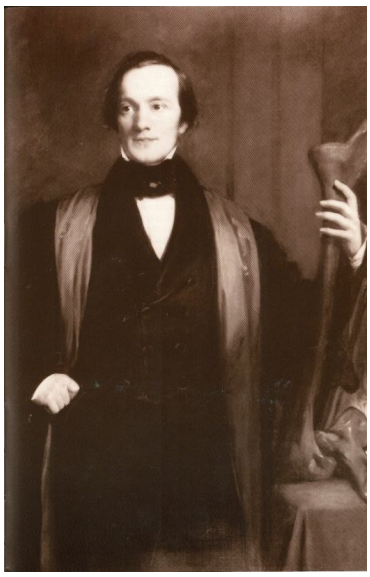
> ***"Somewhat to the trustees' relief the medical and anatomical specimens, including the monsters, were transferred to the Hunterian Museum."*** [6]

The British museum was the first national, secular museum open to the general public.


Charles Darwin

Before Darwin, "Natural History", "Natural Knowledge", and "Natural Science" were used interchangeably to designate research into nature. Not until the late 1800's did science become important in education and industry. Only then did science become a profession with a significant role in society.

Richard Owen (1804-1892 AD), who worked to catalog the Hunterian Museum and transform the museum into a great center of comparative anatomy, was a contemporary of Charles Darwin (1809-1882 AD). A sometime collaborator and often rival of Darwin, Owen was the foremost comparative anatomist of his day. Owen was the scientist who coined the term *Dinosaur* from his research of fossilized bone specimens discovered by Gideon Mantell (1790–1852 AD), William Buckland (1784-1856 AD), and Mary Anning (1799-1847 AD).


Richard Owen

Owen was appointed as superintendent of the natural history department of the British Museum in 1856. Although not popular with other scientists of the day, he was well connected with British high society, and was ultimately able to convince the government of the need for a separate museum of natural

history. The Museum of Natural History in South Kensington, London, owes its existence to Owen's determination and fortitude. Owen's vision came to pass with Britain, the greatest nation of that time, having the greatest museum of natural history, exhibiting comprehensive displays of the natural world for the general public to see.

> ***"In its diverse later manifestations the cabinet of curiosities outgrew its secluded origins in the scholar's study to develop into an important site for social interaction, a meeting place where men and women, high-born and commoners, erudite and casually pleasure-seeking, could all rub shoulders. A new platform had emerged on which polite society could disport itself and from which scholars could interact with each other in important new ways."*** [7]

John Hunter

John Hunter

John Hunter was a Scottish surgeon (1728-1793 AD), who raised surgery from a craft to a science. He was the first surgeon to apply the inductive system of observation and experimentation to the study of disease. He is considered the father of modern scientific surgery in the British Isles. He also developed the practice of dentistry into a modern profession. Hunter's major contributions to medicine were his comparative anatomy museum; his students who took his methods throughout the world especially to America; and his four published treatises:

1. "Natural History of the Human Teeth" (1771)
2. "On Venereal Disease" (1786)
3. "Observations of Certain Parts of the Animal Oeconomy" (1786)
4. "Treatise on the Blood Inflammation of Gunshot Wounds" (1794).

William Hunter

At the age of 20, John Hunter joined his brother William in London. William (1717-1783 AD) has established the first modern British medical school (Great Windmill Street School) at Piccadilly in London. There, William lectured on human anatomy and staged demonstrations through dissection of human cadavers. He had first observed these techniques in Paris and Leiden. William was a natural communicator and lecturer who believed

> ***"A man may do infinitely more good to the public, by teaching his art, than practicing it."*** [8]

He, was as was his brother, an avid collector. His collection:

"was not, for the most part, simply a collection of curiosities, as assembled by many 18th century noblemen and gentlemen, or made as an investment, but intended from the beginning principally to support his medical work and to enhance knowledge of related branches of natural science." [9]

William was a student of William Smellie of Glasgow (1697-1763). Both were medical pioneers who believed ardently in improving birthing techniques, because the mortality rate for both women and children was so extraordinarily high. Smellie introduced accuracy of anatomical detail, useful measurements, and case histories of pregnancies for teaching. Hunter continued these practices and he also rejected the excessive use of instruments (i.e. forceps) in aiding birth. Hunter was the most famous "man-midwife" of his time and recommended a regimen of "natural childbirth", which included friends and family members in support of the mother during delivery.

William's school included an amphitheater for cadaver dissection during lectures and promised hands-on experience of anatomical dissection for each student. His classes offered instruction in anatomy, surgery, physiology, pathology, midwifery, diseases of women and children, inflammation, and venereal disease. All of this occurred 50 years before the scientific understanding of antisepsis and anesthesia; therefore, any surgery of the time, caused incredible pain in the patient and a high risk of mortality. (Widespread usage of antiseptic techniques did not occur until 1867, spearheaded by Joseph Lister. Anesthesia, by ether and chloroform, was introduced by Robert Liston in 1846.)

When John came to work for William, he displayed a great aptitude and flair for anatomy, silled dissection, and specimen preparation. He was an energetic, hard working individual. Finally, due to his dynamic and engaging personality, he became a favorite of the "resurrection men". One of John's duties was to make sure the anatomy theatre and all the students had a fresh supply of human cadavers every term. Unfortunately, at that time there were few legal ways in Great Britian for medical students or institutions to acquire bodies for dissection. Therefore, a vibrant trade had develeped where gangs of men would descend on the freshly buried in the graveyards of London are "resurrect" the bodies from their coffins. It was not illegal to steal bodies, only the caskets and the clothes the corpses were wearing. John spent his next 12 years honing his craft, dissecting 1000's of bodies. He acquired his great sum of knowledge, not from the books of the time which were often full of error, but from human bodies themselves.

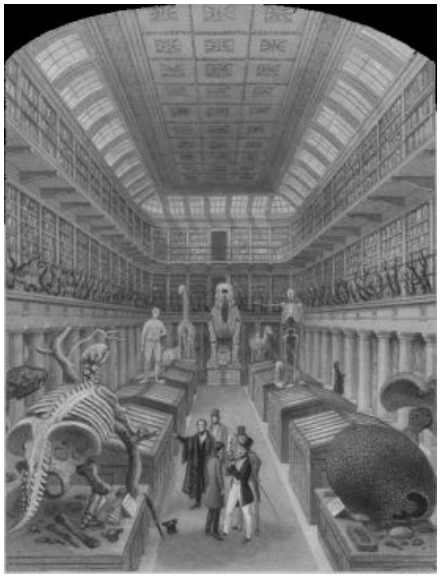
After more than 12 years of working for his brother and studying surgery under William Cheselden and Percivall Pott, John set off as a surgeon for the British during it's conflict with France in the Seven Years' War. There John gained great experience treating all types of battlefield injuries, where he eventually developed a treatment philosophy, which was antithetical to the conventional medical thinking of the day. Hunter observed that wounded soldiers had a much greater chance of survival if the injury was left alone and it was left to nature to take it's course. He published in his *"Gunshot Wounds"* treatise that

> ***"it is contrary to all the rules of surgery founded on our knowledge of the animal economy to enlarge wounds simply as wounds. No wound, let it be even so small, should be made larger, except when preparing to do something else..." [10]***

After 2 years of military service, he returned to Covent Garden in London, where he would eventually establish his own medical school. He and William parted ways after an acrimonious dispute which would leave them estranged for the rest of their life. William continued to teach in his school and eventually published a foundational book in obstetrics, "The Anatomy of the Human Gravid Uterus". The book was lavishly and realistically illustrated by the artist Jan van Rymsdyk, based on many of John Hunter's preparations. William donated his large collection of ancient coins, art, books, insects, minerals, antiquities, and medical specimens to Glasgow University which established the Hunterian Museum in his honor. William's wish for the museum was

> ***"'for the improvement of knowledge' and to be used in ways 'most conducive to the improvement of the students of the University of Glasgow'." [11]***

Throughout his career, John investigated comparative anatomy of humans and animals, collecting over 13,000 specimens which he placed in his own personal museum. He divided the collection into areas - each concentrated on a different subject --



1. contained specimens which demonstrated the relationship between form and function;
2. demonstrated the reproductive organs and development of the fetus;
3. demonstrated pathological changes.

He performed many experiments and observations with bees, chickens, dogs, and many other animals in much in the same way as Charles Darwin would engage in 50 years later. Hunter was fascinated by the ability of the "life principle", as he termed it, to elevate living organisms above inanimate manner.

Hunter always had more students than other surgeon/lecturers of the day, which caused great friction and envy of him within the medical community. Hunter's philosophy of teaching was very similar to his brothers' --

> ***"Hunter's experience of the teaching of these men, coming on top of his exposure to the influence of his brother's teaching, established his conviction that the sharing of surgical knowledge is a prime responsibility of the surgeon and that teaching is a prime concern of a hospital."*** [12]

Hunter's students include:

- William Shippen, who helped establish obstetrics in America;
- Edward Jenner, who developed the practice of vaccination against smallpox;
- Philip Syng Physick, who is considered the "father of surgery" in America.

Hunter's philosophy of inquiry into the mystery of natural history is reflected in his comment to Edward Jenner:

> ***"Why do you ask me a question, by the way of solving it? I think your solution is just; but why think, why not try the experiment?"*** [13]

At the time of his death, Hunter was engaged in over a hundred biological investigations and experiements. In 1793, his museum was acquired by the Royal College of Surgeons of London. In 1859, his body was transferred from it's burial vault at the church of St. Martins-in-the-Fields and reinterred with honors in Westminster Abbey.

For more information, I highly recommend the book by Wendy Moore - The Knife Man.

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Endnotes

[1] Patrick Mauries, Cabinets and Curiosities (London: Thames and Hudson Ltd., 2002), 25.

[2] Mauries, 134.

[3] Yvette Gayrard-Valy, The Story Of Fossils (In Search Of Vanished Worlds) (London: Thames and Hudson, Ltd., 1987), 31.

[4] Margaret Martin, A Long Look At Nature. (The University Of North Carolina Press, 2001), 4.

[5] Mauries, 25.

[6] Margaret Caygill, The Story Of The British Museum. (London: British Museum Press, 1981), 21.

[7] Arthur MacGregor. Curiosity and Enlightenment (Collectors and Collection from the Sixteenth to the Nineteenth Century). (New Haven and London: Yale University Press, 2007) 69.

[8] Lawrence Keppie, William Hunter and The Hunterian Museum In Glasgow 1807-2007 (Edinburgh: Edinburgh University Press, Ltd, 2007), 17.

[9] Keppie, 19.

[10] John Kobler, The Reluctant Surgeon (A Biography of John Hunter, Medical Genius and Great Inquirer of Johnson's England) (Garden City, New York: Doubleday and Company, Inc, 1960), 116.

[11] Keppie, vi.

[12] A.W. Beasley, Home Away from Home (Wellington, New Zealand: Central Institute of Technology, 2000), 35-36.

[13] Beasley, 36.