

HISTORICAL NOTE

JOHN HUNTER (SURGEON)

John Hunter FRS (13 February 1728-16 October 1793) was a Scottish surgeon, one of the most distinguished scientists and surgeons of his day. He was an early advocate of careful observation and scientific method in medicine. He was the husband of Anne Hunter, a teacher, friend and collaborator with Edward Jenner, the inventor of the smallpox vaccine. He learnt anatomy by assisting his elder brother John with dissections in John's anatomy school in London, starting in 1748, and quickly became expert in anatomy. He spent some years as an Army surgeon, worked with dentist James Spence conducting tooth transplants and in 1764 set up his own anatomy school in London. He built up a collection of living animals whose skeletons and other organs he prepared as anatomical specimens, eventually assuming nearly 14,000 preparations demonstrating the anatomy of humans and other vertebrates(1).

Hunter became a Fellow of the Royal Society in 1767. The Hunterian Society of London was named in his honor, and the Hunterian museum at the Royal College of Surgeons preserves his name and his collection of anatomical specimens.

Hunter was born at long Calderwood, now part of East Kilbride, Lanarkshire, Scotland, the youngest of ten children. The date of his birth is uncertain. Robert Chamber's "Book of Days" (1868) gives an alternative birth date of 14 July, and Hunter is recorded as always celebrating his birthday on this date rather than 13 July shown in the parish register of the town of his birth. Family papers cite his birthday as being variously on 7 and 9 February. Three of Hunter's brothers (one of whom had also been named John) had died of illness before John Hunter was born. An elder brother was William Hunter, the anatomist. As a youth, John showed little talent, and helped his brother-in-law as a cabinet-maker. When he was about 21 years he visited William in London, where his brother had become an admired teacher of anatomy. John started as his assistant in dissection (1748), and was soon running the practical classes on his own. It has recently been alleged that Hunter's brother William and his brother's former tutor William Smellie were responsible for the death of many women whose corpses were used for their studies on pregnancy. John is alleged to have been connected to these deaths, since the time he was acting as Williams's assistant. However, persons who studied life on Georgian London agree that the number of gravid women who died in London during the years Hunter's Smellie's work was particularly high for that locality and time; the prevalence of preeclampsia, a common condition affecting ten percent of all pregnancies and one easily treated today but for which there was no treatment in Hunter's time, would more than suffice to explain a mortality rate that seems suspiciously

high to 21st century readers. In *The Anatomy of the Gravid Uterus Exhibited in Figure*, published in 1774, Hunter provides case histories for at least four of the subjects illustrated (2). Hunter studied under William Cheselden at Chelsea Hospital and Percival Pott at St. Bartholomew's Hospital. Hunter also studied with Marie Marguerite Biheron, a famous anatomist and wax modeller teaching in London. Some of the illustrations in his text were likely hers. After qualifying he became Assistant Surgeon (house surgeon) at St. George's Hospital (1756) and Surgeon (1768).

Hunter was commissioned as an Army surgeon in 1760 and was staff surgeon on expedition to the French island of Belle Ile in 1761, then served in 1762 with British Army in the expedition to Portugal. Contrary to prevailing medical opinion at the time, Hunter was against the practice of 'dilation' of gunshot wounds. This practice, which involved the surgeon deliberately expanding a wound with the aim of making the gun powder easier to remove, although sound in theory, in the unsanitary conditions of the time it increased the chances of infection, and Hunter's practice was not to perform dilation except when preparatory to something else such as the removal of bone fragments.

Hunter left the Army in 1763 and spent at least five years working in partnership with James Spence, a well-known London dentist. Although not the first person to conduct tooth transplants between living people, he did advance the state of knowledge in this area by realising that the chances of a successful tooth transplant would improve if the donor tooth was as fresh as possible and was matched for size with the recipient's gums, one of Hunter's patients stated that he had three which lasted for six years, a remarkable period at the time. Hunter set up his own anatomy school in London in 1764 and started private surgical practice.

In 1765, Hunter bought a house near the Earl's court district London. The house had large grounds which were used to house a collection of animals including zebra, Asiatic buffaloes and mountain goats, as well as jackals. In the house itself, Hunter boiled down the skeletons of some of these animals as part of research on animal anatomy. A newspaper article reported many animals that were supposed to be hostile to each other but among which, in this new paradise, the greatest friendships prevail, and this image may have been the inspiration for the "Doctor do little" literary character (3).

Hunter was elected as Fellow of Royal Society in 1767. At this time he was considered the authority on venereal diseases. In May 1767, he believed that gonorrhoea and syphilis were caused by a single pathogen. Living in an age when physicians frequently experimented on themselves, he inoculated himself

with gonorrhoea, using a needle that was unknowingly contaminated with syphilis. When he contracted both syphilis and gonorrhoea, he claimed it proved his erroneous theory that they were the same underlying venereal disease (this is an often repeated legend, but does not appear to be true. The experiment reported in Hunter's A treatise on the venereal disease (part 6 section 2) does not indicate self-experimentation, this was most likely performed on a third party). He championed its treatment with mercury and cauterization. He included his findings in his Treatise on the Venereal Disease, first issued in 1786. Because of Hunter's reputation, knowledge concerning the true nature of gonorrhoea and syphilis was retarded, and it was not until 51 years later that his theory was proved to be wrong, by the French physician Philippe Ricord (4).

In 1768 Hunter was appointed as surgeon to St. George's Hospital. Later he became a member of the company of surgeons. In 1776 he was appointed surgeon to King George III. In 1783 Hunter moved to a large house in Leicester Square, where today there stands a statue to him. The space allowed him to arrange his collection of nearly 14,000 preparations of over 500 species of plants and animals into a teaching museum. The same year, he acquired the skeleton of the 2.31m (7'7" Irish giant Charles Byrne against Byrnes' clear deathbed wishes-he had asked to be buried at the sea. Hunter bribed a member of the funeral party (possibly for £500) and filled the coffin with rocks at an overnight stop, then subsequently published a scientific description of the anatomy and skeleton. The skeleton today, with much of Hunter's surviving collection, is in the Hunterian Museum at the Royal College of Surgeons in London.

In 1786 he was appointed deputy surgeon to the British Army and in March 1790 he was made Surgeon General by the then Prime Minister, William Pitt. While in this post he instituted a reform of the system of appointment and promotion of army surgeons based on experience and merit, rather than the patronage-based system that had been placed. Hunter's death in 1793 followed a heart attack during an argument at St. George's Hospital over the admission of students.

Hunter's character has been discussed by biographers: His nature was kind and generous, though outwardly rude and repelling... later in life, for some private or personal reason, he picked a quarrel with the brother who had formed him and made a man of him, basing the dissension upon a quibble about priority unworthy

of so great an investigator. Yet three years later, he lived to mourn this brother's death in tears.

He was described by one of his assistants late in his life as a man 'warm and impatient, readily provoked, and when irritated, not easily soothed'.

In 1771 he married Anne Home, daughter of Robert Boyne Home and sister of Sir Everard Home. They had four children, two of whom died before the age of five. One of his infant children is buried in the churchyard in Kirkheaton, Northumberland, and the gravestone is Grade II listed. Their fourth child, Agnes, married General Sir James Campbell of Inverneill. In 1799 the government purchased Hunter's collection of papers and specimens, which it presented to the Company of Surgeons.

Hunter helped to improve understanding of human teeth, bone growth and remodeling; inflammation; gunshot wounds; venereal diseases; digestion; the functioning of the lacteals; child development; the separateness of maternal and foetal blood supplies; and the role of the lymphatic system.

A bust of John Hunter stands on a pedestal outside the main entrance to St. George's Hospital in Tooting, South London, along with a lion and unicorn taken from the original Hyde Park Corner Building, Lanesborough House. There is a bust of him in the South West corner of Lincoln's Inn Fields, and one in Leicester Square near where his central London home and anatomy school were situated. The John Hunter Clinic of the Chelsea and Westminster Hospital in London is named after him. His birthplace in Long Calderwood, Scotland, has been preserved as Hunter House Museum (5).

REFERENCES

1. Garrison, Fielding H. An introduction to the history of medicine. Saunders, Philadelphia PA. 1993; p, 274
2. Kobler, John, The Reluctant Surgeon. A Biography of John Hunter, New York, Doubleday. 1960.
3. Medical biography at whonamedit.com(<http://www.whonamedit.com/doctor.cmf/84.html>)
4. John Hunter's Treatise on Venereal Disease (http://www.marshall.edu/library/speccoll/virtual_museum/hoffman/hunter_john.asp)
5. The Hunterian Museum(<http://www.reseng.ac.uk/museums/index.html>)-The Royal College of Surgeons.