

Heberden Historical Series

William Hunter (1718–1783)

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William Hunter (1718–1783) (Fig. 1) and his more famous younger brother, John (1728–1793) were born at Long Calderwood Farm, East Kilbride, a few miles south of Glasgow. William was educated at the College of Glasgow, as the University was then called, following which he became an apprentice to Dr William Cullen (1710–1790) who had started a medical practice in nearby Hamilton. William also attended the anatomical lectures of Alexander Munro, Munro primus (1697–1767) in Edinburgh, following which he left for London according to the dictum of Dr Samuel Johnson (1709–1784) that, ‘the noblest prospect which a Scotchman ever sees is the high road that leads him to England!’ Hunter took up residence in London with two Scottish doctors: William Smellie (1697–1763), who wrote one of the earliest treatises on obstetrics, and then James Douglas (1675–1742) of ‘pouch’ fame. It was Douglas who first described the synovium and deduced its secretions were responsible for lubrication of the joints [1]. Douglas was involved in a monumental study on bones and employed William Hunter as a dissector. This work may well have been the basis of Hunter’s first paper to the Royal Society in 1743 on articular cartilage and its diseases [2].

In this paper on articular cartilage, Hunter was enthralled by the ‘workmanship’ of nature, and appreciated the ability of cartilage to deform under pressure and regain its former shape when the pressure was removed. ‘When an articular cartilage’ he wrote ‘is well prepared, it feels soft, yields to the touch, but restores itself to its former equality of surface when the pressure is taken off’. He also describes in the paper how he ‘fell upon the method not only of bringing their fibrous texture to view, but of tracing the direction and arrangement of these fibres’, but unfortunately failed to describe the method. Nevertheless, he appreciated that collagen fibres anchored in the underlying bone ran vertically through the cartilage: ‘a mass of short and nearly parallel fibres rising from the bone, and terminating at the external surface of the cartilage’. Hunter surmised that transverse fibrils must be present, although he could not detect them: ‘but without doubt there are likewise transverse fibrils which connect them, and make the whole a solid body, though these last are not easily seen, because being very tender, they are destroyed in preparing the cartilage’. Hunter was incorrect in believing the surface of the cartilage was covered by a membrane resembling that of ‘the fore-part of the eyeball’. The appearances of

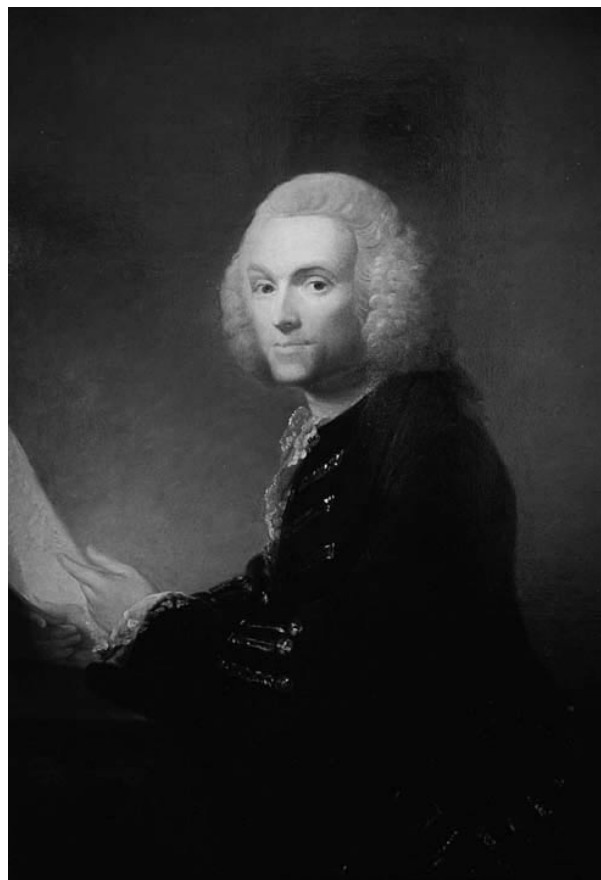


FIG. 1. William Hunter (1718–1783). Portrait by the Scottish artist, Allan Ramsay (1713–1784) now in the Hunterian Museum, University of Glasgow.

a membrane on the surface of hyaline cartilage we know today being due to a layer of glycoprotein, which facilitates joint lubrication, and referred to as the lamina obscurans.

Using a wax injection technique, Hunter deduced that articular cartilage was avascular, and demonstrated the rete vasculosum articulare. He was unable to trace nerves in cartilage, but was aware of its ‘great insensibility’. He continued to believe that nerves were ‘*a sine qua non* in the growth and nourishment of animals’ and that there was ‘no sufficient reason to deny their existence in

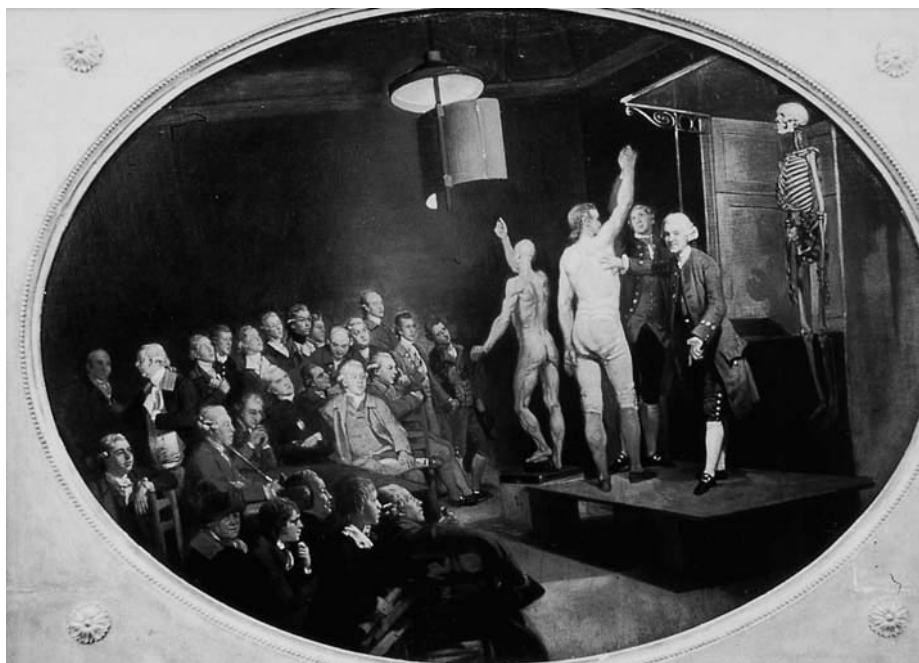


FIG. 2. Painting by the Dutch artist Johann Zoffany (1734–1810), now in the Royal College of Physicians of London, of William Hunter lecturing to members of the Royal Academy. Sir Joshua Reynolds (1723–1792) can be identified by his ear trumpet. Zoffany, although accomplished as a painter, seems less so as an anatomist, for the skeleton has 13 pairs of ribs!

this particular part'. Of course, hyaline cartilage is aneural and also alymphatic. Hunter fully appreciated the devastating effect of purulent material on cartilage, and also that repair of cartilage 'to be a very troublesome disease; that it admits of a Cure and more Difficulty than a carious Bone; and that, when destroyed, it is never recovered'.

Hunter did avail himself of the opportunity of testing the sensibility of tendons encouraged no doubt by his younger brother's advice to Edward Jenner (1749–1823) 'but why think? Why not try the experiment?' A patient who had sustained an injury to a finger exposing the cut ends of a tendon was asked to turn his head away while Hunter proceeded to cut the tendon or a piece of string. The patient thought the latter, although Hunter had cut the tendon. Hunter concluded that tendons were devoid of a nerve supply, which they are near their insertion, but not their origin. Hunter's experiment would not be passed by an ethics committee today!

William Hunter established a school of anatomy in Great Windmill Street, London, where he became a popular lecturer (Fig. 2). He was an obstetrician and his greatest contribution to obstetrics was his masterpiece, *The anatomy of the human gravid uterus* [3].

The Hunter brothers were like squirrels amassing large quantities of various medical and non-medical curiosities. William Hunter's collection of anatomical and pathological specimens range from the mundane to

the exotica, including in the latter collection the first example of osteitis fibrosa cystica [4]. His book collection consisted of some 10 000 volumes, including 534 incunabula. The coin collection is the most extensive private collection in the United Kingdom, and Hunter's collection of shells is only second to that of the Duke of Portland. William Hunter was a friend of Captain James Cook (1728–1779) and as a result he obtained a collection of ethnographic material from the South Seas. All of this vast collection he donated to the University of Glasgow. An 'autobiographical' account of William Hunter was published in 1967 [5].

References

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