

Medical History

James Macartney and his Successor Arthur Jacob, Pioneers in Development of Medical Education, Hospitals, Anatomy and Surgery.

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Accepted: 6th January 2016

Provenance: internally reviewed

SUMMARY

Initially motivated by romantic disappointment, Armagh native James Macartney moved to Dublin to train as a surgeon with William Hartigan and then to London, where his subsequent posts included attachment as Surgeon to a regiment posted to Ireland in 1811 in anticipation of a French invasion. Remaining in Ireland, two years later he succeeded Hartigan as Professor of Anatomy and Chirurgery in Trinity College Dublin where he instigated a series of substantial improvements in the materials, curriculum and buildings provided for the teaching of anatomy in the medical school, often at the expense of harmony with his colleagues.

Having suffered severe ophthalmia as a child, Macartney had a personal interest in investigation of the structure and diseases of the eye. He soon founded the National Eye Infirmary and, a few years later, secured permission from the Board of Trinity College to recruit Arthur Jacob as Demonstrator in Anatomy specialising in ophthalmology.

Shortly after arriving in Dublin, Jacob was first to publish a report identifying the ‘bacillary layer of the retina’ which came to be named the *membrana Jacobi* and is now known as the ‘layer of rods and cones’. His academic career then progressed to include appointment to the Chair of Anatomy and Physiology in, and Presidency of, his *alma mater*, the Royal College of Surgeons in Ireland. While in his clinical practice his achievements included the founding of additional dedicated ophthalmic wards in Dublin hospitals, description of rodent ulcer on the eye-lid and innovation in the treatment of cataract, he had a parallel career as co-founder and (frequently controversial) editor of, and contributor to, the weekly Dublin Medical Press, which remained in publication as the Medical Press and Circular until 1961.

JAMES MACARTNEY (1770-1843)

James Macartney (Figure 1) was born on the 8th March 1770 in Armagh to James Macartney and his wife Mary (née Maxwell) of Mullaghbrack, north of Markethill. The boy was delicate and rigidly disciplined, but did not learn to read until he was 10 years old, at which age he also enrolled in the Armagh Corps of the Irish Volunteers. In 1782 he spent

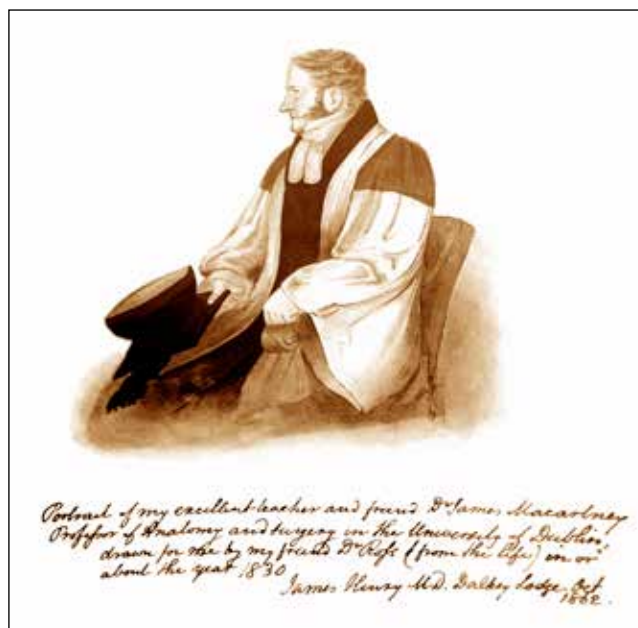


Fig 1. Sketch of James Macartney MD, FRCPI, FLS, MRIA, FRS, LLD.

“Portrait of my excellent teacher and friend Dr James Macartney Professor of Anatomy and Surgery in the University of Dublin, drawn for me by my friend Dr Ross (from the life) in or about the year 1830. James Henry MD. Dalkey Lodge. Oct 1862.”

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a short while at the Classical Endowed School of Armagh (Figure 2), but his education was completed at home. At 18 he left to work as a clerk in his cousins’ merchant business in Newry and returned in 1791, after his father’s death, to take up farming with his brothers on the family’s Rosebrook estate.¹⁻³

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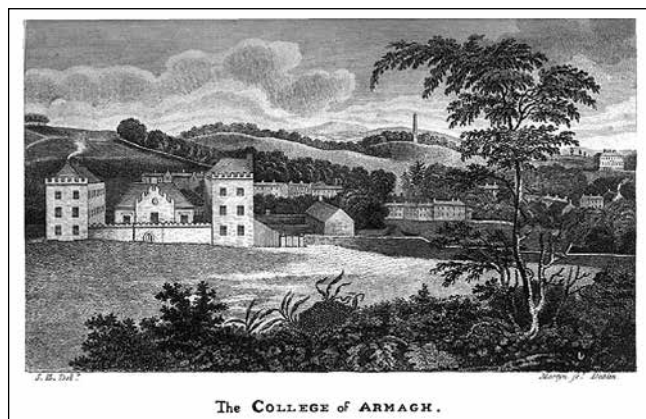


Fig 2. The Classical Endowed School of Armagh as it appeared in 1819.

One of five free schools in Ulster commissioned by King Charles in 1627, it was originally at Mount Norris and moved (“founded, anew”) to the City in 1635.

Disappointed in love, he resolved to take up the profession of surgery (later writing “I thought surgery would harden my heart, as it did others. In this I have been disappointed”) and in March 1794 was apprenticed in Dublin to William Hartigan (c.1756-1812), an eminent surgeon who subsequently became President of the Royal College of Surgeons in Ireland. The following Christmas, Macartney returned to Armagh to renew his courtship and married his old flame, Mary Ekinhead, the following summer, resuming his studies in Dublin in October. In 1796 they moved to London and he spent three strenuous years studying at Guy’s, St. Thomas’ and St. Bartholomew’s Hospitals, as well as the Great Windmill Street School founded in Soho by William Hunter (1718-1783). Macartney was appointed Demonstrator in Anatomy at St. Bartholomew’s in 1798 and, two years later, when he qualified for membership of the Royal College of Surgeons, he was promoted to Lecturer in Comparative Anatomy and held that post for 11 years. During that period, he showed a penchant for disputes with his colleagues, perhaps emulating his father’s unforgiving nature, but nevertheless was elected a Fellow of the Royal Society in March 1811. This honour was bestowed following his presentation of two communications to the Society and he later published a wide variety of papers elsewhere on anatomy, surgery, reform of the medical profession, comparative anatomy and zoology. While working at St. Bartholomew’s, since 1803 he had also been attached as Surgeon to the Royal Radnor Militia, and in August 1811 he resigned his Lectureship to move with the regiment to Ireland.^{1,2}

The regiment disbanded in 1812, and in December of that year, Hartigan died and his chair of Anatomy and Chirurgery in Trinity College Dublin (to which he had been elected in 1806) fell vacant. Despite discouragement from Mrs. Hartigan (who had been promised the proceeds of the public lectures if her late husband’s former deputy, Dr Wilmot, had secured the professorship), Macartney resolved to apply for the post, and in May 1813 took the MD degree at the University of St. Andrews. When the Board of Trinity College met in

the following month to fill the vacant chair there were five candidates. Two of them (including Dr Wilmot) each received just one vote, two none, and Macartney was duly elected when the Provost and the five other Senior Fellows voted for him. Shortly afterwards the College conferred the MD *honoris causa* on the new Professor to soothe the misgivings of the Royal College of Physicians of Ireland. It had recommended that a physician be appointed because the duties of the post included the office of Clinical Physician to Sir Patrick Dun’s Hospital, giving clinical instruction to students of Medicine, a task that it believed could not properly be undertaken by someone who had only studied and practised surgery and who, in that post, could not expect the professional cooperation of physicians on the staff of the hospital. Five years later, however, Macartney overcame this objection by persuading the Royal College of Physicians of Ireland to elect him an honorary fellow, mentioning in his letter to the President that ‘I might add that Dr. Harvey discovered the circulation of the blood while preparing for his lectures on surgery in the College of Physicians of London’ (Figure 3).^{1,4}



Figure 3. Formal portrait of James Macartney MD, FRCPI, FLS, MRIA, FRS, LLD.

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Macartney was ambitious for the development and reputation of the school and in the year following his appointment helped to found the Medical Society of Trinity College. Anxious to afford the most complete facilities for his students, he created a museum of anatomical specimens (which was sold to the University of Cambridge after his retirement). Over the next

ten years, in the face of indifference if not antagonism from the Board, he sought increased accommodation in order to alleviate the cramped and unpleasant conditions in which anatomy was being taught. A new building for the medical school was eventually erected in 1825 on marshy ground at the far eastern end of the campus, literally reflecting the desire of the Board to keep the medical students at a distance from other students. It also arranged its separation from the rest of the University by a wall and a rarely-opened gate, so that direct access from the campus was usually blocked. It was reached instead via a stable mews from Park Street, now Lincoln Place but then the location of 'rookeries' (slums) and disreputable public houses reported by Macartney to be tempting some of his students to gambling and drunkenness. Just as unfortunately, he had been repeatedly frustrated in his attempts to supervise its design and construction, and the result was a still-inadequate, damp and badly-built school, soon requiring almost complete reconstruction.⁴

To him, and his coeval anatomists, medical studies entailed dissection by all the students, but the demand for cadavers encouraged the provision of anatomical subjects by 'resurrection men'. In earlier days Macartney himself was once 'taken prisoner' on such an expedition and was 'not liberated before morning & treated with the greatest indignity by the Cheshire Militia' employed to watch a recent grave. When popular campaigns arose in the late 1820s against such practices, he decided to campaign amongst influential members of Dublin society to encourage the bequest of bodies by example, should the law permit. Then he petitioned Parliament to pass an Act not alone to make bequest of one's body for dissection legal and obligatory for executors to fulfil, but also to repeal the law which made it a misdemeanour to buy or possess a dead body for the purpose of dissection. In 1828 he gave evidence to the parliamentary Select Committee of enquiry responsible for drafting the Anatomy Bill of 1829. That was withdrawn in the face of opposition from the Archbishop of Canterbury but later modified to be passed as the Anatomy Act of 1832, allowing bequest and also the dissection of the bodies of deceased workhouse residents unclaimed by friends.^{4,5}

He was involved in repeated disagreements with some colleagues, including occasions when he sought to undertake post mortem examinations of patients who had been under the care of other physicians and also when colleagues arranged lectures to coincide with his. The latter disagreements ultimately led to his resignation of the chair 'in consequence of repeated annoyances in the past of the Board or rather the present' in 1837. But he had not been content to rely on his own teaching alone, and in 1818 the Board granted, at his request, extraordinary permission for the specialist Arthur Jacob to give extra lectures on the structure and diseases of the eye. Macartney had a direct personal interest in these subjects, having suffered severe ophthalmia, with 'barbarous' treatment, for nearly a year at the age of eight. Thus he was a sponsor, though not a mentor, of one of the most disputatious and irascible men in Irish medicine.¹⁻⁵

ARTHUR JACOB (1790-1874)

Arthur Jacob, whose father and grandfather were surgeons, was born in 1790 at Knockfin, near Maryborough (now Port Laoise). He was indentured to his father for three years before continuing his medical training at the Royal College of Surgeons in Dublin from 1811, becoming a Member in 1814. He continued his studies in Edinburgh (where he graduated MD in 1814) and Paris. Returning to Dublin in 1819, after further studies in London, he was appointed a Demonstrator of Anatomy in Macartney's school in Trinity College, added new specimens to the anatomy museum there, and specialised in ophthalmology. The first ophthalmic hospital in Dublin, the National Eye Infirmary, had been established by Macartney in Molesworth Street in 1814, but Jacob opened his own Eye Hospital in Kildare Street.^{2,4,5-7}

In 1824 Jacob resigned from Trinity College to move both his teaching and practice to the rival Park Street School of Medicine, newly-established in response to students' dissatisfaction with conditions still prevalent in the school at nearby Trinity College. Two years later he was appointed Professor of Anatomy and Physiology in the Royal College of Surgeons in Ireland, but was said to find it difficult to keep order in his classes. One anecdote recorded a class ending in chaos after Jacob offered to fight a student who had fired a pellet at his spectacles from a pea-shooter. When Macartney resigned his chair in Trinity College in 1837, Jacob was unsuccessful in his application to replace him, receiving a vote from only one member of the Board, although nevertheless elected President of the Royal College of Surgeons in Ireland in the same year. He had founded an Ophthalmic Hospital in Pitt (now Balfe) Street in 1829 and, five years later, settled in the City of Dublin Hospital in Baggot Street (of which he had been a co-founder in 1832) after the opening of a dedicated eye ward. His younger rival, Sir William Wilde, subsequently founded the competing St. Mark's Ophthalmic Hospital in Lincoln Place (beside Trinity College) in 1844.^{2,4,5-7}

Jacob extended Macartney's anatomical work on the eye and in 1819 was able to publish the first account of the 'bacillary layer of the retina' which we now refer to as the 'layer of rods and cones', sensitive to light. With the eye secured under water, the posterior half of the sclerotic was removed, and the choroid coat was opened and turned down:

If the exposed surface be now carefully examined... instead of the blue-white reticulated surface... usually presented by the retina... a uniform villous structure, more or less tinged by the black pigment, presents itself. If... a breach is made in it,... a membrane of great delicacy may be separated and turned down in folds over the choroid coat, presenting the most beautiful specimen of a delicate tissue which the human body affords.⁸

The light sensitivity was a later discovery, as indeed was the fine structure of the retina described by William Bowman (1816-1892) in 1849.⁹

In 1827 Jacob described 'rodent ulcer' which attacks the eyelids and the surrounding face without contaminating the neighbouring lymphatic glands¹⁰ and, in the same year, first recommended the removal of cataract by needling to break up the lens, using an ordinary sewing needle bent at the sharp end:

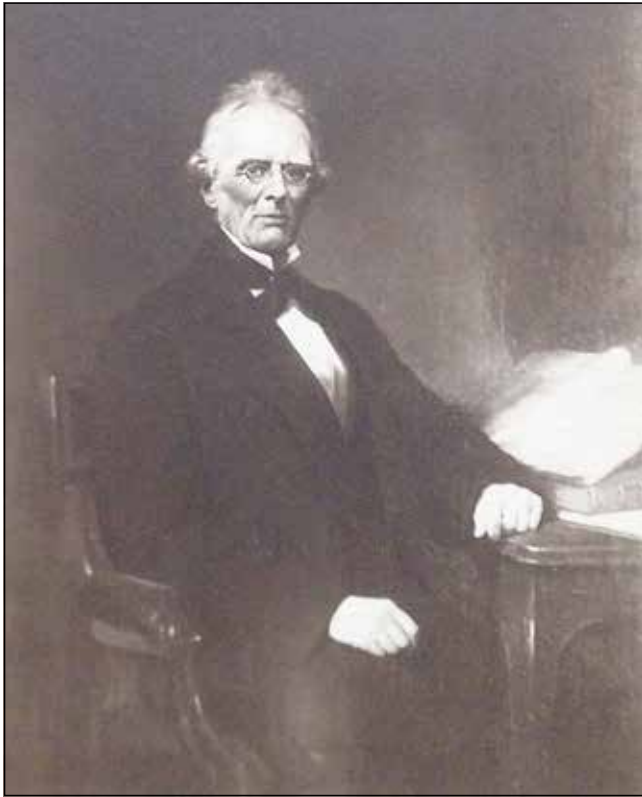


Fig 4. Portrait of Arthur Jacob, MD, FRCSI, in the year of his retirement, 1867.

Painted by Stephen Catterson Smith, PRHA, and reproduced courtesy of the Royal College of Surgeons in Ireland.

I strike the point of the needle suddenly into the cornea, about a line [1/12 inch] from its margin, and there hold it until any struggles of the patient, which may be made, cease. There must be no hesitation... I advise the operator to pause here for a moment, holding the eye firmly and steadily on the point of his needle, and if necessary to say a word of encouragement or remonstrance to the patient.⁷

Hobson's choice!

For a brief unhappy spell Jacob helped in editing the Dublin Journal of Medical & Chemical Science (founded in 1832)

and later settled into editing the weekly Dublin Medical Press, which he founded with Henry Maunsell (1806-1879) in 1839 in order "to diffuse useful knowledge... to instil honourable principles, and foster kind feelings in the breast of the student" among other desirable aims. He performed his editorial duties in the realm of medical politics with provocative and combative zeal for 22 years, contributing to every issue, to be succeeded in that role for 40 more years by his fourth son, Archibald, who was also a prominent ophthalmologist in Dublin. In 1867 (Figure 4) Arthur Jacob retired from his clinical and academic appointments to live at Newbarnes (the residence of his third son, a civil engineer) in Barrow-in-Furness, where he died on 21st September 1874.^{7,11}

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