

Visit to the Royal College of Physicians and Surgeons of Glasgow and the contributions of Lister and Macewen to Science and Modern Medicine

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ABSTRACT

Introduction: on a formal trip to Scotland at the end of 2018 at the traditional and renowned University of Glasgow and your very famous School of Medicine, before the covid-19 pandemic, I was able to spend a day on an official visit to the Glasgow College and Museum of Surgeons, "Lister's House" and many illustrious others, where I was able to study, feel and observe the magnitude of the greatness of the men who preceded with glory, merits, pioneering spirit and a lot of hard work the great discussions for the time and relevant discoveries that would lead to incalculable advances for the development of health science and clinical medicine today, the world is also made up of microbes, every advance in current science depends on the history of our ancestors. Currently we can say that our autoimmune defense system is an appropriate recognition system, more than just a defense system of the body, given the large increase in autoimmune diseases and viral infections with the appearance of the covid-2019 pandemic and its termination. Both Macewen and Lister were great pioneers in their fields.

Keywords: Medicine history; Brain Surgery; Medical Sciences; Experimental surgery; Anatomophysiology; Pioneers.

Dear Editor,

Sir William Macewen (1848 – 1924), Port Bannatyne, Isle of Bute, Scotland and died 22 March 1924 (aged 75) Glasgow, Scotland: Scottish surgeon pioneer in modern brain surgery (Figure 1) - Father of neurosurgery, graduated from Glasgow in 1869, the year his teacher, Joseph Lister (1827-1912), moved to Edinburgh (Figure 2). Their careers as academics, teachers and contributors to developments at the medical college of Glasgow, as

well as in the Scottish capital, have been magnificent. Since ancient times in prehistory, the struggle for survival and adaptation of the human species is a relentless and constant struggle, man has always tried to innovate and develop new techniques that made it possible to cure diseases involving specific traumas directly in the human nervous system, the Incas already carried out Cranial trepanation techniques, Egyptians and Greeks also ventured, but in the

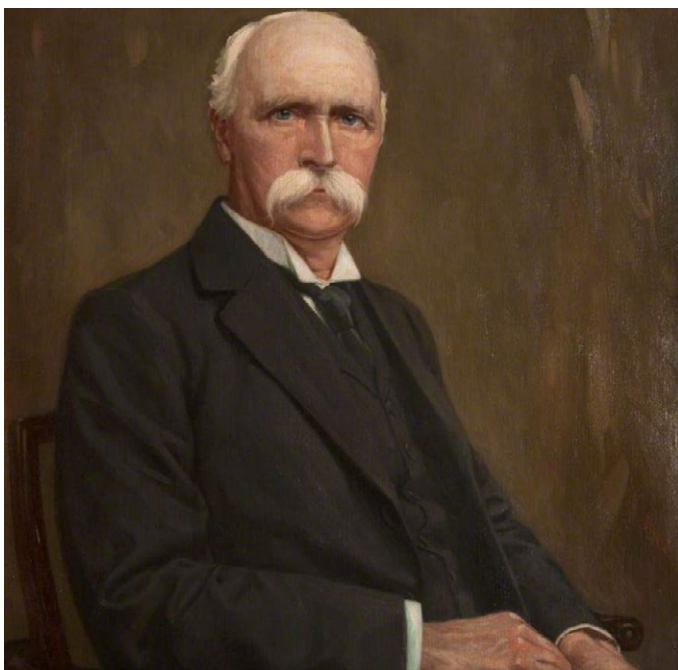


Figure 1



Figure 2

beginning of the last century there were pioneers who decided to study and definitely will modernize the field of neurological surgery, which would later greatly reduce human suffering.

In 1865, Joseph Lister revolutionized medical science when he developed his antiseptic technique, vastly improving morbidity in this surgical wards at Glasgow Royal Infirmary. One of this students during the 1860s, William Macewen, would go on to become the greatest protagonist of Lister's theory and practice, many years before it was adopted universally. In Glasgow in the 1870's Macewen was at the vanguard of medical innovation. He evolved from antiseptic to aseptic practice – designing instruments from single pieces of metal, boiling ligatures and other equipment, and insisting on surgical staff wearing sterilizable gowns, Such practices weren't fully embraced by hospitals until the turn of the 20th century.

In, 1865 while working at Glasgow Royal Infirmary, Joseph Lister treated the first case using his new antiseptic method. The case was the compound fracture of the leg of an eleven-year old boy. The wound was dressed with carbolic-soaked lint, changed regularly. It was fully healed in six weeks with no sign of infection. The treatment revolutionised medical science.

When Lister's wards were demolished in 1924, this able and the fireplace were saved and brought to the College. Together with archives and instruments, they form an important part of our Lister heritage, and remind us of the humble beginnings of this major innovation in medicine and surgery. The archives of Sir William Macewen and Joseph Lister are maintained to this day by the Archives at the

University of Glasgow and the Royal College of Physicians and Surgeons of Glasgow.

This 19th century operating table was used by Sir William Macewen to carry out surgery at the Western Infirmary in Glasgow. The table, which is wooden, is mounted on wheels and has a mechanism enabling it to be raised at one end.

Sir William Macewen carried out surgery using this operating table at the Western Infirmary in Glasgow. The table, which is wooden, is mounted on wheels and has a mechanism enabling it to be raised at one end. It was discovered by a porter in an old storeroom in the McKelvie Hospital, Oban and was presented to the College by the Board of Management for Oban and District Hospitals in 1954. Macewen was a surgeon who attempted operations which had never been done before. His work can be divided into three broad categories: surgical cure of hernia; surgical solutions for problems of the bones and joints; and surgical solutions for afflictions of the central nervous system. In 1874 Macewen became a Fellow of the Faculty of Physicians and Surgeons of Glasgow and in November of the same year he was appointed to the staff of the Glasgow Royal Infirmary. This appointment marked the beginning of a period of great activity and illustrious achievements. As a former student of Lister's, Macewen moved beyond Lister's precedents by seeking to create the ideal germ-free conditions in his operating theatre. Macewen's scrupulous attention to detail involved the meticulous preparation of his own hands and arms before surgery, and those of his nurses and assistants. For surgery he dressed in a gown which could be sterilised between operations, to the derision of many of his contemporaries. Sir William Macewen had his own instruments made, formed from a single piece of steel, in order to ensure that they were fully sterile. When Macewen was working at the Royal Infirmary his nurses purchased a fish kettle to be used for sterilising instruments, after the hospital authorities had refused to fund a container for the purpose. In 1892 Macewen became Regius Professor of Surgery at the University of Glasgow and transferred his surgical activities from the Royal to the Western Infirmary. In 1913 he became an Honorary Fellow of the Faculty of Physicians and Surgeons of Glasgow.

Held within the Lister Room of the College is Sir Joseph Lister's graduation gown. Lister was a student of University College London initially as a botany student. After obtaining his bachelor's degree, he studied medicine and became first assistant to surgeon James Syme (1799- 1870) at the University of Edinburgh. Date: c. 1840-1850s



Figure 3. Sir William Macewen's operating table (Author's original image).



Figure 4. Lister's Graduation Gown (Author's original image).

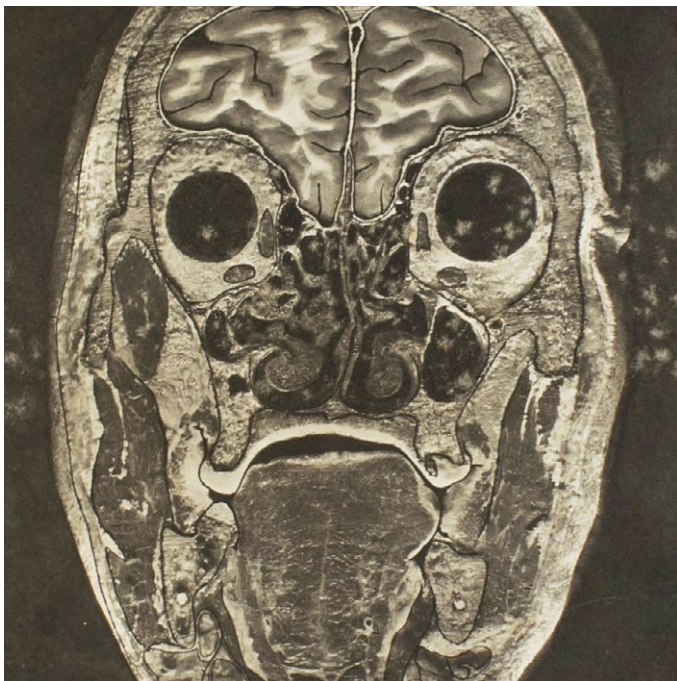


Figure 5. Atlas of Head Sections. Sir William Macewen, 1893 - The 'Atlas of Head Sections' consists of 53 copper plates engraved from frozen sections of the head. Each section of the head was cut off by Macewen himself.

Lord Joseph Lister

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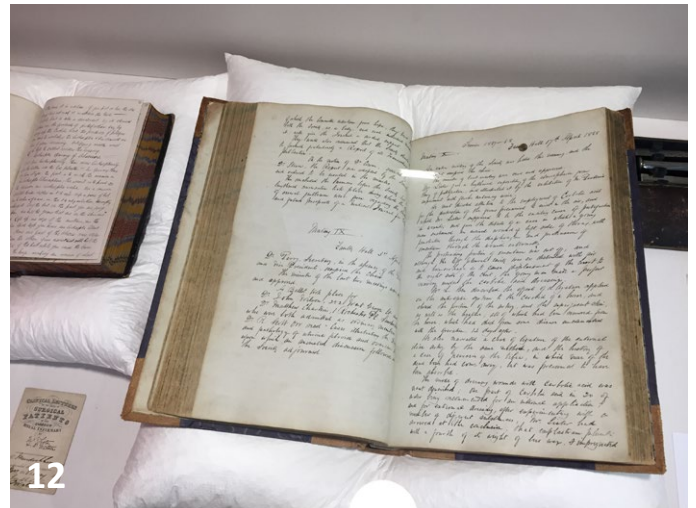
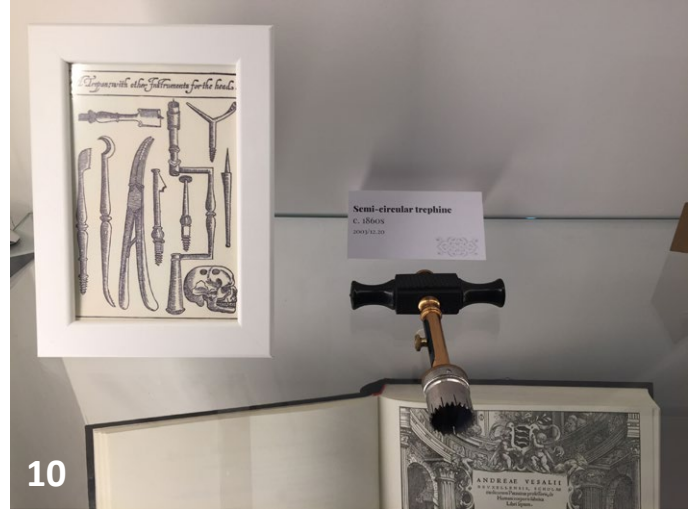
Sir William Beatty FRS (April 1773 – 25 March 1842) was an Irish surgeon who served in the Royal Navy. Born in Derry, Ireland, he joined as a surgeon's mate in 1791 at the age of 18. He is best known as the Ship's Surgeon aboard HMS Victory during the Battle of Trafalgar, at which he witnessed the death of Admiral Horatio Nelson, and for authoring an account of that battle – The Death of Lord Nelson.

Battle of Trafalgar

On the day of the battle, 21 October 1805, Victory had 821 crewmen aboard, 62 of whom would be killed and 109 wounded. Beatty was personally called upon to undertake 11 amputations, mostly legs, actions that saved many lives. Only six wounded men subsequently died. However, when Nelson was himself wounded, Beatty did not administer treatment, claiming that he believed that the Admiral was beyond treatment. The Admiral had expressed the wish to be buried in his native soil, rather than simply being thrown in the sea like other mariners of the time. Beatty had to preserve the Admiral's body for the voyage back to Britain, and decided to place it in a barrel of brandy. Beatty relates how gases from the corpse caused the barrel lid to open on 28 October 1805, alarming the posted marine guard. On arrival at Gibraltar, the barrel had to be topped up with spirits of wine because it had filled the cavities in the body. This incident may have led to the legend that British seamen had drunk the brandy surrounding the body. As Victory approached the Nore, Beatty performed an autopsy, removing the fatal musket ball (now at Windsor Castle), and later writing a report A Concise History of the Wound. Beatty then attended Nelson's state funeral in London. Victory was decommissioned in January 1806 and Beatty was posted as surgeon-in-charge of Sussex, the former HMS Union and now a hospital ship at Sheerness. There he wrote his Authentic Narrative of the Death of Lord Nelson, which was eventually published in early 1807.



Figure 6. Surgical instruments (Author's original image). Belonging to William Batty (1773-1842), surgeon to Admiral Nelson at the Battle of Trafalgar. 1805.



Figures 7, 8 and 9. Are respectively, Lister's Library and his desk.

Figures 10, 11 and 12. A semicircular trepan, period medicines and the obligatory record books in all environments.



Figures 13 and 14. My photo with the current Director of the Institution and the assistant to everyone with me, supporting me and explaining the story to me.

Contributions to modern surgery

Macewen demonstrates his triangle to Lane, Hirschfelder, Barkan and Stillman. One of his earliest

contributions while at the Royal Infirmary, in 1877, was in orthopaedics, by means of the development of the first bone grafts, but also in knee surgery using a special instrument (Macewen's osteotome) both techniques becoming key treatments for the highly prevalent disease of rickets (caused by a lack of Vitamin D). Macewen was interested in the biology of bone and carried out a classical series of experiments on animals in order to determine how bones grow and may be repaired. He developed surgical treatments for mastoid disease and pyogenic cysts of the temporal bone and has identified an anatomical structure in this bone, the foveola suprameatica, which was named MacEwen's triangle in his honour.

His method of surgical removal of lungs became a major medical weapon in the treatment of tuberculosis and lung cancer, thus saving many patients. His name was also immortalised in Medicine in two other instances: the Macewen's operation for inguinal hernia and the Macewen's sign for hydrocephalus and brain abscess. Another important contribution by Macewen to modern surgery was the technique of endotracheal anaesthesia with the help of orotracheal intubation, which he described in 1880, and still in use today. Macewen was noted for his early and creative use of photographs for documenting patients cases and for teaching surgery and medicine. He pioneered the use of photos of body parts and pathological specimens, as well as photos taken before, after and during treatment/surgery.

Time and history show everything, this visit really changed my life, the world of science belongs to those who deserve it and not opportunists, they work tirelessly for the truth. There will always be a watershed, someone who changes the course of history and the plumb of life. Progress continues across the world.

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