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Undetected Medical Histories: William Macewen as police surgeon

Abstract

This article discusses the importance of considering undetected lives and histories in prominent medical archives. Through the case study of William Macewen's archive, held in the Royal College of Physicians and Surgeons of Glasgow (RCPSG), this paper discusses Macewen's early career as a Glasgow police surgeon in the 1870s. Utilising an underexamined component of his archive this paper discusses the various impacts of the specific experience and environment of police surgeon work on Macewen's evolving practices in medicine and surgery, highlighting unknown aspects of experimentation and innovation. In doing so, we argue that paying acute attention to undetected materials and stories in archival work can offer significant new opportunities for exploring the life-worlds of prominent medical figures and generate new pathways of inquiry that go beyond traditional medical histories.

Key words: Macewen, medicine, crime, police surgeon, Glasgow

In 1871 William Macewen (1848 – 1924), later to become one of the pioneers of late nineteenth and early twentieth century surgery, was appointed police surgeon in Glasgow, Scotland. He was located at Glasgow Central Police Office on South Albion Street and the police office was a locus of emergencies and casualties in the city, with Macewen attending to a variety of cases, from accidents and assaults to murders. Serious cases would often be referred to the casualty department of Glasgow Royal Infirmary, via the police office. Emerging as a restless innovator, Macewen used this front-line experience to experiment, research and report on a range of clinical subjects, including poisoning, fear, homicidal and accidental wounds, gun-shot wounds, and alcoholic coma.

[Plate 1 – portrait of William Macewen, c1880 (RCPSG 1/12/2/64)]

The post of police surgeon was only Macewen's second position as a qualified surgeon (at 23 years old), which he held until 1875. This was a decade in which he began to develop his reputation in the city. He became a Fellow of the Faculty of Physicians and Surgeons of Glasgow in 1874, and was appointed assistant surgeon at Glasgow Royal Infirmary in 1875, becoming full surgeon in 1877.

The recognition of Macewen in the history of medicine and surgery focuses on his landmark innovations, principally in brain surgery and bone surgery, but also across

numerous other areas such as aseptic surgical practice. These innovations date from 1879 onwards (and their recognition later in the 1880s), when he was an established surgeon with a position at the University of Glasgow, beginning to gain an international reputation and increasingly published in medical journals across the UK, Europe and North America. Publishing internationally acclaimed original works on anatomy, brain and spinal surgery in the 1890s cemented his status, and in 1892 he became Regus Professor of Surgery at the University of Glasgow. He was knighted in 1902, and in 1909 he was appointed honorary surgeon to King Edward VII.

Studies on Macewen's impact on medical science have therefore focused principally on records from the period 1879 to his death in 1924.¹ Biographical sketches of the surgeon focus on the astonishing range of innovations he achieved, and the outstanding eminence his status reached.² It is perhaps no surprise then that the records of his early career as police surgeon have been overlooked. The exception to this is A. K. Bowman's substantial biography of Macewen, which takes a comprehensive view of the entirety of the surgeon's career, including his early learning and development. Bowman refers to the police surgeon work as a valuable grounding in frontline medical and surgical practice, which informed many of Macewen's later achievements.³ Building upon Bowman's linear biographical foundations, our work delves into the depths of Macewen's police surgeon experiences through his cases. In doing so, we offer important additional insights into his developing medical practice as a police surgeon and expose a variety of lives, experiences and spaces that reveal wider trajectories for developing criminal-medical histories.

The position of police surgeon was considered a junior post within a medical career, and something of a curiosity in its mixture of forensic medicine (still in its infancy), emergency medicine and public health. Exceptions to this are prominent figures in 19th century medicine in Edinburgh and Aberdeen, Henry Duncan Littlejohn and Francis Ogston, who maintained a police surgeon role long into their careers. Working for the police department was not part of the established route of progression which Macewen's career otherwise followed. To illustrate, Crowther and Dupree's expansive *Medical lives in the age of surgical revolution* does not mention the role of police surgeon or casualty surgeon as one of the "varieties of practice" open to new entrants into the profession in the late 19th century.⁴

This paper draws upon Macewen's police surgeon work to illuminate the potential that considering the undetected in the history of medicine can achieve. Our use of the

undetected in this work refers to the ways in which the archival materials, profession of the police surgeon, and experiences of the police surgeon and those who encountered them have remained passed over and largely unseen in the histories of medicine to-date. Paying acute attention to the overlooked and unnoticed aspects of prominent medical figures' lives and collections arguably offers exciting potential to unearth new ways of knowing and understanding criminal-medical life-worlds. We begin by outlining Macewen's papers, held in the Royal College of Physicians and Surgeons of Glasgow (RCPSG), to demonstrate the peripheral place of the police surgeon records in the collection. Tracing our experiences of encountering the police surgeon materials we give greater insight into this part of the collection. Following this we discuss examples of Macewen's police surgeon practice that demonstrate the unnoticed places, people, encounters and voices that can be exposed through these archives. In conclusion, we argue that thinking through the undetected in relation to prominent medical collections, such as Macewen's, gives important insight into silenced voices, practices and places that enhance and expand our understanding of medical histories.

Macewen's papers are split between three different repositories – the Royal College of Physicians and Surgeons of Glasgow (RCPSG), the University of Glasgow's Archives and Special Collections, and NHS Greater Glasgow and Clyde Archives. The College's Macewen papers cover his wide range of clinical, teaching and research interests in surgery, medicine and anatomy, dated 1872 - 1922. The papers contain the record of many of Macewen's career landmarks, in surgical practice, education and research, in the form of case notes, manuscripts and correspondence. His private journals span the years 1872 until 1895, mainly containing his notes of cases admitted to Glasgow Royal Infirmary. These journals provide evidence of some of Macewen's remarkable advances in surgery, for example in osteotomy, bone transplant, and brain surgery, and have been used by researchers exploring the medical history of these specialties⁵. Interspersed within the College's collection are a number of items – listed below - relating to the intriguing, early part of his career as police surgeon:

- Private Journal of Surgical Cases, 1872 – 1875 (RCPSG 10/9/12)
- Medical Scrapbook, 1872 – 1874 (RCPSG 10/9/10A)
- Newspaper cuttings relating to murder case, 1874 (RCPSG 10/6/4/1-19)
- Letter book and case histories, 1873 – 1880 (RCPSG 10/9/32)
- Correspondence (various references)

- Medical and case notes (various references)
- Articles in manuscript (various references)

The materials give a wealth of insight into Macewen's life and experience at the time of being a police surgeon in Glasgow and yet remain underexplored in relation to wider studies on Macewen and the histories of medicine. Our attraction to these materials stemmed from the peripheral status of the police surgeon role in the established narrative of Macewen's career. The records therefore stood out, literally jarring against the perceived archival knowledge of this collection. Our curiosity then evolved into an interest in the wider narratives of the city in relation to medicine and crime.

Attention to these collections led to the development of a collaborative project between the University of Glasgow and the RCPSG, funded by the Carnegie Trust, that sought to uncover the practices of the police surgeon in the nineteenth century in three key cities across Scotland (Glasgow, Aberdeen and Edinburgh). Entitled *A Distinctly Scottish Surgeon? Uncovering Police Surgery in 19th Century Scotland*, the project actively sought out undetected aspects of the archival collections of three prominent medical figures – Francis Ogston, Henry Duncan Littlejohn and William Macewen – in order to excavate the importance of their police surgeon experiences to their wider medical practices. In relation to Macewen, of particular relevance to the project were the private journal and medical scrapbooks that enabled a way of viewing Macewen's life-worlds during this innovative period.

The Private Journal of Surgical Cases (1872 – 1875) contains many of the police surgeon cases Macewen wrote about in *Glasgow Medical Journal* articles throughout the 1870s.⁶ In addition to the police surgeon cases, it also contains handwritten notes on incidents he encountered while working as a part-time parish medical officer. The journal contains a very immediate and vivid record of Macewen's practice at this time. It is also of interest because it records more than his clinical practice, capturing his experience in the specific place of Glasgow, the locations and people involved in cases, his reflections, experimentation, and method of writing.

The Medical Scrapbook (1872 – 1874) complements the journal, although in its cuttings of cases reported in the press, it includes far more individual cases.⁷ Macewen collected these cuttings, from a variety of newspapers, often annotating them in a basic way. The whole range of the police surgeon's work is shown here, from minor cases relating to public health

to murder cases. Some of the newspaper reports are headed ‘Series of Incidents on a Saturday Night’ and the focus of the reported cases – assault, suicide attempts, domestic violence, alcohol and drug abuse – remind us of the role of the police surgeon as ‘casualty surgeon’. The cases reported in the press often refer to Macewen by name, indicating that the police surgeon role had a public profile in the city. There is a specific collection of cuttings about one particular case, relating to the trial of Archibald Miller for the murder of his wife Jessie Edwards (Miller) in 1874.⁸ The trial included contributions from clinicians, including Macewen. Some of the cuttings are pasted onto Detective Department-headed paper, and at this period, some of his correspondence is written on stationary from the Court House. These materials, neglected in other medical histories, became valuable tools for exploring the wider geographies of the police surgeon and their importance on Macewen’s experimental medical practice.

The police surgeon, particularly within nineteenth century Scotland, remains an underexplored figure in the history of medicine. The role is sometimes referred to as the ‘casualty surgeon’ or the ‘police medical attendant’. However, the role of police surgeon, who was employed by the police department, is distinct from the role of casualty surgeon working at a hospital casualty department. The police surgeon in this period undertook a number of medical-legal responsibilities.⁹ This included the examination of persons and bodies in a range of circumstances, including suspected intoxication, injury, neglect, and death in sudden or suspicious circumstances. Of particular interest to our project was not only *what* practices were taking place by the police surgeon but *where* they were occurring. One of the immediate features of the Macewen police surgeon archive material is how strongly it locates the surgeon’s practice in the city of Glasgow, and in a variety of non-medical spaces within the city. The police surgeon was an extremely mobile figure and cases are attended to in people’s homes, in streets, lanes and parks, and in the police office itself. Macewen is also located in the court house, in the police force’s detective department, and in cells. The police surgeon’s work is located almost entirely outside of the usual spaces of medical care, connecting it to the locality / localities of the city in a way that is unique.

This feature of the police surgeon archive material is in contrast to the vast body of records that comprise the evidence of Macewen’s career from 1875 onwards when it was almost entirely hospital or university-based. While these records place the surgeon’s work in the city of the Glasgow (and sometimes beyond), it is located within the established medical and educational spaces of the city, and its institutions, with their specific context and

environment. The police surgeon records exist outside these spaces and beyond the established medical environment – the institutions from which medical history is almost exclusively narrated, with the exception of rarely documented private practice in domestic settings – allowing insight into the range of places that encompass criminal-medical histories.

One of Macewen's published cases will now be considered in order to open up possibilities for further research into the role of police surgeon records and other undetected medical histories and medical archives in a social history of medicine. The first case entered in the *Private Journal of Surgical Cases* relates to an opium poisoning in June 1872 (more than six months after he took up the post) and can be used to expose the range of places associated with police surgeon practice. It is a dramatic opening to a surgical case book:

At 5 A.M. on the 8th June I was asked to see a man "who was either dead or dying" as the messenger stated.

I found an old man lying on his left side in bed with a ghastly death like appearance pervading his features. Pulse not felt, heart sounds inaudible, respirations imperceptible, features pinched, face pale, lips blanched, cold perspiration beading his forehead, eyelids closed, pupils pin prict (markedly so), extremities & surface of body cold, trunk and limbs rigid ...

At this stage I was almost inclined to think with the onlookers that he was dead, but keeping the radial pulse in hand I thought I detected a very slight quiver, so slight that I could not convince myself that it was such until it was repeated, and this continued to repeat itself at the interval of half a minute ...

He was stated to have taken opium and when I entered the house a number of pill boxes presented themselves on the table near the bed, marked 'Opium pills'.¹⁰

[Plate 2 – *Private journal of surgical cases* (RCPSG 10/9/12)]

This case highlights the police surgeon's mobility as Macewen was called out of the police office to deal with an emergency situation in a patient's home. He records a range of intimate details of the man's near-death condition, and also features aspects of his surroundings and the evidence of his overdose. Interestingly this example demonstrates Macewen's administration of emergency medical treatment outside of a clinical environment – a new (and clearly experimental) treatment of intravenous ammonia, which he had previously been testing on animals, to stimulate the vascular and nervous systems. After regaining consciousness and being admitted to hospital, the patient later died. From the newspaper cuttings about the case in Macewen's *Medical Scrapbook*, we learn that the patient was 'David Thomson, a warper, 69 years of age, residing at 203 High Street', a further glimpse of the unseen lives to appear through these sources.¹¹ These records provide

evidence for the kind of police surgeon practice occurring in the city, in non-medical spaces such as homes, in the 1870s (other cases provide evidence for the kind of practice occurring in spaces such as the police office itself).¹² The records also show that the police surgeon was equipped, within these spaces, to provide certain medical (and surgical) treatment and administer medicine. Yet, it also gives rare insight into the spaces of patient's worlds often unseen in wider medical histories.

This is further revealed in an article for the *Glasgow Medical Journal* – ‘Injection of ammonia into the circulation in a case of opium poisoning’ – which Macewen wrote soon after the event.¹³ The case highlights the link between Macewen's ongoing research and his police surgeon case work. The article expands on the case notes in many ways, for example providing background on his experiments with intravenous injection of ammonia, and the possible uses of this treatment.

Another interesting feature of these early cases is the way in which Macewen reports the environment and condition of the patient in non-medical terms, before reporting on the clinical condition, diagnosis and treatment. For example, the opium poisoning article self-consciously provides an atmospheric picture of the overdose victim and his surroundings. Macewen quotes French poetry while describing the man's condition as he tried to regain consciousness:

Sometimes the sentence would be commenced by him quite indistinctly, but after a few words the remainder would either be uttered in a semi-indistinct tone, or perhaps die away altogether and remain unspoken. His state at this stage, reminded one of the lines by Boileau, in his description of indolence:-

“La Mollesse, a ces mots, sent sa langue glacee,

Et, lasse de parler, succombant sous l'effort,

Soupire, etend les bras, ferme l'oeil et s'endort.”¹⁴

His biographer praised the style with which Macewen reports the case, referring to it as ‘one of the most dramatically written narratives in his literary work [...] The manner in which the story is unfolded reveals the high degree of artistry with which Macewen was endowed. It is a story of sombre light and shade which, set on canvas, would be Rembrandtesque.’¹⁵ Considering the case reports almost eighty years after Bowman, Macewen's use of an, at times, explicitly literary style, contrasts sharply with the circumstances of the case. While the detail of the case locates it vividly within the city at a particular period, and within the social and psychological context of poverty, addiction and

despair, Macewen's writing style could arguably locate the patient in a yet further marginalised position within the medical narrative. At least one other published case derived from the Private Journal – the case of phosphorous poisoning – contains similar features and issues.¹⁶

It is notable that articles written later in the 1870s employ a more straightforward style of reporting of clinical cases, even when the author continues to provide significant contextual detail (discussed later in this article). These stylistic features also locate the police surgeon cases within a very early period in Macewen's career, when the surgeon is not yet fully established within the medical and intellectual community of the city.

This section turns to focus on issues of crime and violence in relation to Macewen's police practice. Macewen's research on wounds, which coincided with his move into the field of forensic medicine in the mid-late 1870s, helps to illuminate the interesting ways in which a focus on the police surgeon can reveal new insights into criminal landscapes and medical histories. At this stage, when Macewen was beginning to advance his career with hospital and university positions, his police surgeon work was informing his wider research interests. The examples here show how he was lifting himself out of the obscurity of the police office, through vigorous research, innovation of the surgical craft, and sometimes bold self-promotion.¹⁷

Macewen's early interest in emergency medicine is evident in his first ever published article, 'Notes on a blood transfusion carried out by Mr Lister'.¹⁸ This refers to the surgeon Joseph Lister, who revolutionised medicine with the development of antiseptic surgical theory and practice. Lister introduced antiseptic practice while working in Glasgow in the 1860s. Macewen's experience under the teaching of Lister at Glasgow Royal Infirmary certainly inspired his scientific, experimental, and methodological approach to surgery. It also exposed him to the particular challenges of emergency medicine in this city of extremes, of poverty, commerce, violence and expansion.

The Private Journal of Surgical Cases contains notes on a wide range of police office cases, possibly the most common being the treatment of wounds, usually penetrating wounds caused by assault or accident. Macewen was interested in both the effective treatment of wounds via investigative surgery, and research into the specific causes of wounds for forensic purposes. These interests resulted in two notable articles in the *Glasgow Medical Journal*, both based on notes found in his private journal.

1876 saw the publication of his article ‘Wounds in relation to the instruments which produce them’.¹⁹ In the article title he was listed as casualty surgeon (by the time of publication he had left the police surgeon post to become assistant surgeon at Glasgow Royal Infirmary), and also Lecturer in Medical Jurisprudence at the University of Glasgow. In addition to its original purpose as an aid to accurate wound diagnosis, this extraordinary article provides a detailed catalogue of the clinical results and context of violent crime in the city at a specific period. Detail includes the range of weapons used, and the context of the wounds caused by assault and accident. Macewen provides a systematic analysis of seventy-one cases of 104 wounds, produced by fifty-one different instruments (or “articles”). For example –

Observation XLVII. Wound by a shoemaker’s knife.-

On July 30, 1875, J. O’H. was wounded on the head over the left parietal. The wound was an inch in length externally, and penetrated the tissues in an oblique direction, exposing the skull for about a quarter of an inch. The edges were very keen. There were no entire hair bulbs visible, and the cut surfaces were very fine.²⁰

These cases were seen by Macewen in the police office and later at Glasgow Royal Infirmary, between 1872 and 1875. Cases, particularly head wounds, are recorded in the Private Journal in some detail, often with illustrations.

[Plate 3 – Private journal of surgical cases (RCPSG 10/9/12)]

In the article’s introduction, Macewen sets the context of these cases with an intriguing commentary before beginning his analysis: ‘The observations in the present paper were made on the living, as accident in part, but mainly the physical expression of human passion [...]’.²¹ He also sets out the importance of the context of the production of the wounds, as well as the clinical observation and treatment of the wounds themselves: ‘... it was determined that the characters of the wound should be noted carefully in the first instance, and after that was done the method of its production ascertained by eye witnesses’.²² The aim of the article is to provide guidance to those diagnosing the cause of wounds, in criminal cases and as part of evidence in the courts. Macewen’s reporting of the context – of the acts of violence and the victims – are straightforward and unadorned by any literary style. Because of the focus on the victim’s wound and the act of violence that inflicted it, any wider context of the person’s circumstance, and the motive of violence, is entirely missing. For example:

Observation LXIII. Wound produced by an earthenware bowl. On April 17, 1875, a woman, about 40 years of age, presented herself with a somewhat curved wound, situated on the posterior and upper part of the head, which raised the tissues in a flap from the skull, and produced a roughened serrated mark on the bone, extending fully a quarter of an inch along the surface of the skull. [...]

This wound was produced by an earthenware bowl, which was thrown from a short distance, and which broke as it came into contact with the head.²³

Each of the seventy-one cases recorded and reported is a story of violence in the city. Whilst the details presented mask human experiences through a medicalised framing, working within the gaps and silences of these materials allow details about violence within the city to be revealed. Through the physical wounds presented we begin to see traces of lives lived through violence, particularly in relation to women and their, often marginalised, experiences of abuse. Of the seventy-one cases, seventeen are women, twenty-five men, and in twenty-nine cases gender isn't specified.

In addition to his move into forensic medicine, this period also saw Macewen challenge the conventional wisdom of surgical textbooks (and their esteemed authors). In the *Private Journal of Surgical Cases* in 1872 and 1873 he noted several cases of treatment of wounds, particularly of the lungs, for example a case involving a 12 year old boy with a life-threatening knife wound. In the corresponding *Medical Scrapbook* of newspaper cuttings, this case is referred to as the Ropework Lane stabbing case.²⁴ By adopting an investigative surgical approach, which was not at the time recommended when treating damage to the lungs, Macewen was able to locate a fragment of the knife in the lung. He then removed the fragment, adhering to the antiseptic approach developed by Joseph Lister.

The Ropework Lane stabbing case is of interest on a number of levels – the range of texts, locality and narrative, Macewen's surgical approach to the case, the role of surgical practice in the criminal investigation, and the way the case moves into the contemporary medical discourse. The newspaper cuttings relating to the case, which Macewen kept in his *Medical Scrapbook*, show a level of detail that suggest his surgical notes on police cases would on occasion feed into press reports, perhaps via briefings to local reporters. For example, the detail about the size of the fragment:

Dr M'Ewen was in prompt attendance, and found that Wilson's injuries were of a dangerous character. From the gash made in the back he succeeded in extracting a piece of steel fully an inch in length, which penetrated the lungs, the knife having broken through coming in contact with a rib.²⁵

Macewen's article resulting from this case, 'Penetrating wounds of thorax and abdomen treated antiseptically', was explicit in its criticism of the contemporary textbook approach to the lung. In his remarks on the case, he challenges the assertion made in recent medical literature that the surgeon 'should throw aside all direct or manipulative modes of investigation'. Instead, he boldly asserts that 'If, without complicating the original injury, an investigation is enabled to be made into the nature of such wounds, and an intelligent treatment thereby adopted instead of groping in the dark, an advance in surgery has been made'.²⁶ While dismissing the 'groping in the dark' of some in the medical profession, Macewen is also careful to signal his adherence to Lister's antiseptic principles.

The article also demonstrates the link Macewen was making between his police surgeon practice and policing itself. Not only did the procedure advance the possibilities of surgery of the lung, it also provided evidence for the criminal case against the stabbing suspect:

The external wound was therefore enlarged, so as to admit a pair of narrow bladed forceps, which with considerable difficulty reached, seized, and withdrew the substance, which then proved to be part of the large blade of a pocket knife...

A pocket knife was found on a man who was apprehended on suspicion, which had one of its blades broke [...] all corresponding exactly with the portion of steel taken out of the lung.²⁷

These examples demonstrate the varied geographies of the city exposed through attention to Macewen's police surgeon practice. Attention to wounds and wounding is revealing not only of the nature of violence but of those that are impacted by it. Wider issues of violence are disclosed, such as poverty and abuse, that aid in a deeper understanding of the city and its histories. However, whilst the focus of this article is on Macewen's experience of this world as a young surgeon beginning to make his mark on the profession, increased attention could be given to the victims of these stories of violence. The unseen, often desperate lives of the people at the centre of these cases is sometimes revealed in Macewen's case notes, press cuttings and articles. However, these people can easily be overlooked, even further marginalised by their position as 'cases', and as human beings overshadowed by the figure of Macewen. This is a common problem with the practice of 'revealing' historical medical archives, not least because 19th century medical histories often amplify the personality of the medical man. Instead, through further research using undetected records less focused on landmark advances, we argue that records such as the ones discussed here could be used to redress, or rehabilitate, narratives of a city's crime, violence and victims.

This paper has offered a glimpse into the practice of the police surgeon in 1870s Glasgow, through the archives of William Macewen held at the Royal College of Physicians and Surgeons of Glasgow. That this has been an overlooked part of the Macewen archive reflects the underexplored nature of police surgeon practice in narratives of nineteenth century medical history. The article has explored the potential for paying greater attention to undetected biographical histories of prominent medical figures at a range of different scales. Firstly in relation to the overlooked presence of the police surgeon materials within the Macewen collection and secondly on the people, places, practices and experiences that working with these materials can reveal. It has focused on two themes, initially that of mobility and place – how the records localise the police surgeon cases and the police surgeon’s practice within the city, often in spaces outside of those expected in histories of medicine and health. Macewen’s recording of his practice in his case notes is also considered. Furthermore, of violence and its victims – how the records contribute to wider and more intimate narratives of violence in the city, and the utility of police surgeon practice to advances in forensic medicine. In doing so, this paper has sought to raise a number of suggestions for what exploring the police surgeon can do for engaging with issues of crime, violence and medicine. In considering Macewen’s police surgeon practice we have begun to turn attention away from Macewen himself to consider wider issues of poverty, addiction and violence within the city and have demonstrated the potential of this for the development of new medical histories. Our aim in this work is to inspire greater attention to the undetected within prominent medical archives in order to encourage new opportunities for exploring the life-worlds of medical figures that transcend traditional medical histories.

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² R. McGregor, ‘William Macewen, Glasgow Police Surgeon’, Royal College of Physicians and Surgeons of Glasgow heritage blog, 24 February 2016, <https://heritageblog.rcpsg.ac.uk/2016/02/24/william-macewen-glasgow-police-surgeon/>

³ A. K. Bowman, *The life and teaching of Sir William Macewen: a chapter in the history of surgery* (London, 1942), 226.

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- ⁶ RCPSG 10/9/12 GB 250 10/9/12, Private Journal of Surgical Cases, 1872 – 1875, Sir William Macewen, (1848-1924), surgeon.
- ⁷ RCPSG 10/9/10A GB 250 10/9/10A, Medical Scrapbook, 1872 – 1874, Sir William Macewen, (1848-1924), surgeon.
- ⁸ RCPSG 10/6/4/1-19 GB 250 10/9/10A, Medical Scrapbook, 1872 – 1874, Sir William Macewen, (1848-1924), surgeon.
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- ¹² Ibid.
- ¹³ W. Macewen, 'Injection of ammonia into the circulation in a case of opium poisoning', *Glasgow Medical Journal*, iv, 1872, 493-502.
- ¹⁴ Ibid, 497.
- ¹⁵ Bowman, *The life and teaching of Sir William Macewen*, 227-228.
- ¹⁶ W. Macewen, 'Case of phosphorous poisoning', *Glasgow Medical Journal*, v, 1873, 407-409.
- ¹⁷ W. Macewen, 'Penetrating wounds of the thorax and abdomen treated antiseptically', *Glasgow Medical Journal*, vii, 1875, 1-10.
- ¹⁸ W. Macewen, 'Notes on a blood transfusion carried out by Mr Lister', *Glasgow Medical Journal*, ii, 1869, 128-130.
- ¹⁹ W. Macewen, 'Wounds in relation to the instruments which produce them', *Glasgow Medical Journal*, viii, 1876, 28-79.
- ²⁰ Ibid, 51.
- ²¹ Ibid, 28.
- ²² Ibid, 29.
- ²³ Ibid, 58.
- ²⁴ RCPSG 10/9/10A GB 250 10/9/10A, Medical Scrapbook, 1872 – 1874, Sir William Macewen, (1848-1924), surgeon
- ²⁵ Ibid.
- ²⁶ W. Macewen, 'Penetrating wounds of the thorax and abdomen treated antiseptically', *Glasgow Medical Journal*, vii, 1875, 6.
- ²⁷ Ibid, 3.