

The
Scottish Society
Of the
History of Medicine

(Founded April, 1948)

REPORT OF
PROCEEDINGS

SESSION 2014-15 and 2015-2016

The Scottish Society of the History of Medicine

OFFICE BEARERS

	(2014-2015)	(2015-2016)
President	DR AR BUTLER	DR AR BUTLER
Vice-President	DR M MCCRAE	DR N FINLAYSON
Past President	DR DAVID BOYD	DR DAVID BOYD
Hon Secretary	MRS CAROL PARRY	MR A DEMETRIADES
Hon Treasurer	MR IAIN MACINTYRE	DR MALCOLM KINNEAR
Hon Auditor	DR RUFUS ROSS	DR RUFUS ROSS
Hon Editor	DR DJ WRIGHT	DR DJ WRIGHT
Council	DR N FINLAYSON	DR G HOOPER
	DR G HOOPER	DR GORDON LOWE
	DR GORDON LOWE	DR N MacGILLIVRAY
	PROF A RAEBURN	DR IAIN MACLEOD
	DR J RICHARDSON	DR JANET SHEPHERD
	DR JANET SHEPHERD	
	MISS CHRISTINE SHORT	

The Scottish Society of the History of Medicine

(Founded April, 1948)

Report of Proceedings

CONTENTS

Papers	Page
a) Some Aspects of the History of the SSHM <i>David Wright</i>	4
b) Sir William Macewen and the Princess Louise Hospital, Erskine – the Man for the Moment <i>Ken Patterson</i>	17
c) The Medical and Political Impact of the 1848-49 Cholera Epidemic in Scotland <i>Neil MacGillivray</i>	22
d) The Life of Dr Colin Arrott Browning RN <i>Malcolm Kinnear</i>	31
e) The Girton and Newnham Unit of the SWH <i>Carol Parry and Elaine Morrison</i>	42
f) The Genetics of Prenatal Diagnosis and its Social Impact <i>Paula Blair</i>	48
g) Stillbirth in Glasgow after the Formation of the NHS <i>Maelle Duchemin-Pelletier</i>	57
h) Chassar Moir, a Great Montrosian and World-renowned Medical Pioneer <i>Andrew Orr</i>	66
i) 230 Years of Care- a History of Psychiatry in Montrose <i>Christopher Pell</i>	67

SESSION 2014-2015 and 2015-2016

The Scottish Society of the History of Medicine

REPORT OF PROCEEDINGS SESSION 2014-2015

THE SIXTY SIXTH ANNUAL GENERAL MEETING

The Sixty Sixth Annual General Meeting was held at the Edinburgh Academy on 25 October 2014. The President, Dr Tony Butler, was in the chair. The Secretary, Mrs Carol Parry, presented her report and the Treasurer, Mr Iain Macintyre, presented the Treasurer's report, which was accepted. Dr George Gordon retired from Council and was thanked for his contributions and one new member was elected to Council, Dr Jan Shepherd.

THE TWO HUNDREDTH ORDINARY MEETING

The Two Hundredth Ordinary Meeting of the Society was held at the Edinburgh Academy on 25 October 2014, directly following the Sixty Sixth Annual General Meeting. There were two speakers. The first, Dr Allan Beveridge, took as his title "Portrait of the Psychiatrist as a Young Man -the Formative years of RD Laing"

Dr Beveridge gave an excellent talk on RD Laing, illustrated with many slides including a number of photographs of Laing in his earlier years. The subject of his talk is covered in detail in his 2011 book, published by Oxford University Press, titled *Portrait of the Psychiatrist as a Young Man -the Early Writing and Work of RD Laing 1927-1960*. (ISBN-13 978-0199583577). In preparing his material, Dr Beveridge had had access to many of Laing's private papers and clinical notes. In discussion after the talk John Chalmers recalled meeting Laing while they were both on National Service at Catterick in the 1950s.

The second speaker, Dr David Wright, talked on "Some Aspects of the History of the Scottish Society of the History of Medicine".

SOME ASPECTS OF THE HISTORY OF THE SCOTTISH SOCIETY OF THE HISTORY OF MEDICINE

The Scottish Society of the History of Medicine (SSHM), was founded in 1948 and has met regularly since then. Each year there has been an Annual General Meeting, when matters relating to the society and its management are

discussed, and, usually, three Ordinary Meetings, (Spring, Summer and Autumn), when papers are presented. This autumn's meeting is the 200th Ordinary Meeting, and this paper presents a brief review of the SSHM's activities over the last 66 years, to offer some perspective.

My information comes from three main sources. The first is the SSHM Proceedings from 1948-2012. The second is a scrapbook, relating to the early years of the Society, given to me by Mrs Barbara Tait after the death of Dr Haldane Tait, the Society's first Secretary. It included papers from Mrs Jean Guthrie given after the death of Dr Douglas Guthrie, the Society's first President. Thirdly are Minutes of Council Meetings and AGMs and correspondence from the early 1980s onwards and Newsletters of the Society from 1972 until 1999.

I have divided the time into three periods, a) 1948 to 1964, b) 1965 to 1994 and c) 1995 to 2014. For each I've chosen some milestones or events of significance to the Society recalling some of the meetings and introducing a few of the personalities who have graced our Society and who have inspired me.

1948-1964.

During the first 16 years of the Society's existence, there was one Secretary, Haldane Tait and one Treasurer, Dr WA Alexander.

The first Report of Proceedings of the Society records "*[The] Society came into being on 23 April 1948, when a well-attended and representative gathering of medical men and other interested persons from all over Scotland met in the Hall of the Royal College of Surgeons in Edinburgh. It was then agreed to constitute the Society and to call it "The Scottish Society of the History of Medicine". A constitution was drawn up and Office-Bearers for the ensuing years were elected. From this beginning the Society has grown steadily and now has a membership of some hundred persons.*"

The President was Dr Douglas Guthrie, the Honorary Secretary was Dr Haldane Tait and the Honorary Treasurer was Dr WA Alexander. Although these three were based in Edinburgh, the council of 10 members included Professor Campbell of Aberdeen, Dr Henry Gibson of Dundee and Mr AL Goodall from Glasgow.

By 1950 there were 97 members, 49 from Edinburgh, 32 from Glasgow and the West, 9 from elsewhere in Scotland and 7 from England.

The 1948-49 Proceedings reported on the first five Ordinary Meetings. The first, in the Edinburgh Royal College of Surgeons, (RCSEd) after the Preliminary Meeting, was by Dr Gibson on "*The Early History of Dundee Royal Infirmary*". The second, two months later, was by Dr John Ritchie of

Edinburgh on “*Quarantine for Plague in Scotland during the Sixteenth and Seventeenth Centuries*”.

In October the third meeting was in the Royal Faculty of Physicians and Surgeons, Glasgow. Two papers were read, the first by Professor Mackie, Professor of Scottish History at Glasgow University, on “*The History of Glasgow*”, and the second by Mr AL Goodall, Honorary Librarian of the Royal Faculty on the “*History of the Faculty*”.

The fourth meeting, in February 1949, was in the Edinburgh Royal College of Physicians, (RCPEd), with Dr Haldane Tait talking on “*Notes on the History of Paediatrics in Scotland*”.

The fifth meeting, in June 1949, was a so-called Pilgrimage to places associated with William Smellie, William Cullen and the Hunter brothers. At Lanark, the grave and library of Smellie were visited and a talk on Smellie given by Professor Sam Cameron, Professor Emeritus of Midwifery at Glasgow University. This was followed by visits to Hamilton to the site of the house where Cullen and William Hunter once practised and to the farm of Longcalderswood, near East Kilbride, birthplace of John and William Hunter.



Fig 1 SSHM visit to Lanark 18 June 1948

Fig 1 is a photograph taken at Lanark, showing twenty-eight members or guests, not so very different from the number attending summer meetings in the last few years. In the front row is Douglas Guthrie, the first President. He

is tall, moustached, in a single-breasted suit and with clasped hands. On his right, with his hat in his left hand is one of the Vice-Presidents, Professor GB Fleming of Glasgow. On his right is the Treasurer, Dr WA Alexander. Standing in the second row, behind Professor Fleming and Dr Guthrie, with his hair slightly raised, is Dr WJ Stuart, the other Vice President. Standing to the left of Dr Guthrie, with dark hair and a double-breasted suit, is Dr Haldane Tait, the first Secretary.

Others of note in this photograph, are the speaker, Professor Sam Cameron, standing towards the right of the photograph, with arms folded and a bow tie.



Fig 2 SSHM visit to Torphichen 24 June 1950

Fig 2 is a photograph taken at the eighth meeting of the Society at Torphichen Priory on 24 June 1950. Earlier that day, at a meeting in the rooms of the Royal Society of Edinburgh in George Street, Edinburgh, the SSHM had welcomed three distinguished North American guests, Richard Shryock, Professor of History of Medicine at Johns Hopkins University, Baltimore, Whitfield J Bell Jnr, Professor of American History at Dickinson College, Carlisle, Pennsylvania and Lloyd Stevenson of London, Ontario, Canada. The first two had presented papers at the morning meeting and then, after lunch, members and guests set off on a tour of sites of medical history interest in what we would now call West Lothian. First, they visited the tomb of William Cullen in the graveyard of Kirknewton and then the Mains of Ecclesmachan,

birthplace of Robert Liston, where they saw a stained-glass window in the church gifted by the Royal College of Surgeons of Edinburgh as a memorial to Liston. Finally, they visited Torphichen Priory, associated with the ancient order of the Knights of St John.

On the extreme left is Dr Elaine Stocquart, one of several formidable lady members. The tall gentleman, towards the left, with a dark overcoat, with hands in pockets, is Lloyd Stevenson from London, Ontario. Professor Whitfield Bell from Pennsylvania is towards the right, wearing a bow tie and with a light double-breasted overcoat. On his right, also with a bow tie, is Douglas Guthrie. To Dr Guthrie's right is Dr Menzies Campbell, the eminent dental historian and standing on his right, in a light overcoat, is Professor Shryock of Baltimore. Haldane Tait is in front of Douglas Guthrie, on his hunkers and without an overcoat. Knowing Haldane, it's probably his overcoat in front, spread out to protect Archie Goodall's knee from the damp grass. Dr Margaret Menzies Campbell is the rearmost of three ladies on the right.



Fig 3 SSHM visit to Greyfriars' Kirkyard, Edinburgh, 26 June 1954

Fig 3 is a photograph from the twentieth meeting, in Edinburgh on 26 June 1954. Members had met in the New Library of the RCPE, where the Librarian, Leonard Jolley, had talked on the *Early History of Scottish Medical Literature*. After lunch, members visited Greyfriars Kirkyard, where the President, Dr John Ritchie, recalled the distinguished men of science,

medicine and literature whose last resting places were there, including the physician Archibald Pitcairne, the surgeons James Borthwick and Thomas Kincaid, the anatomists Alexander Munro, *primus* and *secundus* and the chemist Joseph Black.

The photograph shows Dr Ritchie on the right holding his notes. On the extreme left is the Edinburgh Physician, Dr TRR Todd, known as Tarara Todd, who was the Society's President in the early 1970s, and on his left Haldane Tait can just be seen. Douglas Guthrie is on the left, with one hand in his pocket and the other holding his hat and some notes. Leaning on the wall, looking at Dr Ritchie, is Professor Norman Dott, the eminent neurosurgeon, President from 1966-68.



Fig 4 SSHM visit to Denholm, 13 June 1964

The last of these photographs of early meetings (Fig 4) was taken at Denholm in June 1964. Following lunch in a hotel in Hawick, there was a trip to the nearby village of Denholm, birthplace of the linguist, poet and doctor Dr John Leyden. Two papers were presented in the hotel, one by the President of the Society, Dr Armstrong Davidson, on *Shakespeare-Some Medical Problems* and the other by Dr Douglas Guthrie on the *Life of Dr John Leyden*. The photograph is taken on the village green at Denholm, where there is a monument to Leyden.

In the middle of the front row is Dr Guthrie with a book in his left hand and on his right, in a light-coloured coat, is his wife, Mrs Jean Guthrie. To her right with a broad smile and his hands behind his back is Professor Norman Dott. In the back, on the far right, next but one from the end is Haldane Tait. In the front row, standing to the right of the lady with the large white handbag, is Dr TRR Todd. Standing behind, and to the right of him, is Phillip Harris, the Edinburgh Neurosurgeon and colleague of Dott. To the left of the monument is I think, Miss Joan Ferguson, tall with dark hair, for many years, the RCPE Librarian. Two to her right is, I think, Dr Bill Conacher, who succeeded Dr Alexander as Treasurer and fourth from the left of the group, with dark hair and eyes almost shut, is Alastair Masson, who followed Dr Tait as Secretary.

Two memorable members from this period

Douglas Guthrie and Haldane Tait were close colleagues and friends. Guthrie was senior in years and was better known, but both held the society dear and should be remembered for their considerable contributions.

Douglas Guthrie, (Fig 5), born in 1885 in Dysart, Fife, where his father was a minister, was educated in Fife and the Royal High School in Edinburgh, and read medicine at Edinburgh University. After a year abroad, in Vienna and Jena, he became a general practitioner in Lanark.

After three years, he moved back to Edinburgh, and became an otolaryngologist. Over 30 years he made significant contributions to the specialty, particularly in the field of speech disorders. He was elected FRS Edinburgh in 1930. He also developed an interest in the history of medicine, influenced by, among others, John Comrie, Lecturer in the History of Medicine at Edinburgh University.

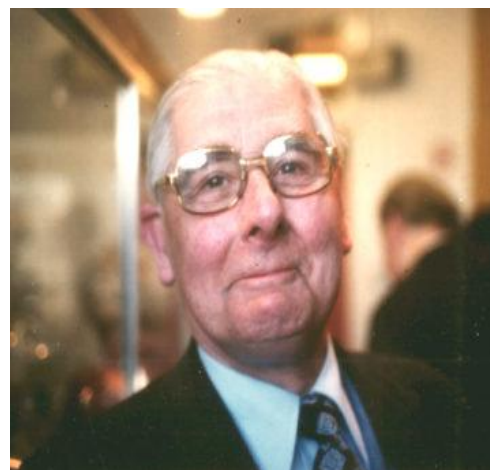


Fig 5 Douglas Guthrie (1885-1975) Fig 6 Haldane Philp Tait (1911-1990)

By the age of 60, retired from his ENT commitments, Guthrie had written “*A History of Medicine*” and, after a review in *The Observer* by George Bernard Shaw, this book became widely known and read. Between 1945 and 1958 there were three reprints and in 1958 a new, revised edition was published and this itself was reprinted in 1960. Like Comrie, Guthrie became Lecturer in the History of Medicine in Edinburgh and he was much in demand as a lecturer all over the world. He wrote many articles, some of which were collected in a book called “*Janus in the Doorway*” (1963).

In 1948, as we have seen, he was involved in the founding of the Scottish Society of the History of Medicine and was its first President and, in 1965, he was one of the founders of the British Society for the History of Medicine and became its first President.

He was widely read, in the classical world and geography, as well as the sciences, and he brought a broad and thoughtful approach to his lecturing and writing. He was a modest, kindly and generous man, who “*always gave an impression of serene and unruffled calm.*” [1]

He was married twice and when he died, in 1975, he left a considerable sum of money to the Scottish Society, which the Society received in 1985, after the death of his second wife, Jean.

Haldane Philp Tait, (1911-1990), (Fig 6), was born and educated in Edinburgh. He had a distinguished career in preventive medicine in relation to child health.

He made an enormous contribution to the History of Medicine. He was a founder member of the SSHM and its first secretary. He ran its affairs single-handedly for fifteen years and was Joint Secretary for many years thereafter. He was President of the SSHM from 1977-1979 and in 1981 was made Honorary President in recognition of his contribution to the Society.

He was a prolific writer on medico-historical subjects and will be remembered particularly for the Annual Report of the Proceedings of the Society. This started as an eight-page report covering meetings of the Society, but from about 1953 he began increasingly to include notes on items of medico-historical interest and by 1970 the Report of Proceedings was a 56-page publication, distributed to medical history societies and libraries world-wide.

He had wide ranging knowledge and an encyclopaedic memory. He was nonetheless an unassuming man and always offered support and encouragement to new office bearers in the Society and his many friends young or old. Though there are now fewer of those who knew him, the Society remembers him annually through the Haldane Tait lecture and dinner, which started in 1992.

The second period, between 1965 and 1994.

Between 1965 and 1994. Membership increased to over 200 and there were usually two honorary secretaries rather than one. However, the finances of the Society became an increasing challenge, primarily because the subscription remained at a generously low level, (£1, raised to £7 in 1992)

However, in 1984, the Guthrie Bequest transformed the financial situation. Douglas Guthrie died in 1975, leaving money to the Society. However, the Bequest was not realized until 1984, after the death of Jean Guthrie. The substantial sum (some £50,000) was invested on behalf of the Society, allowing it to make regular grants to support history of medicine activities in Scotland, primarily by supporting the publishing of books. It also allowed the Society to restart publishing its Proceedings, which had become increasingly attenuated from the 1970s.

In June 1976 the Society contributed to a Symposium on “The Early Years of the Edinburgh Medical School”, to coincide with a special exhibition on the 250th Anniversary of the foundation of the medical faculty of the University.



Fig 7 SSHM visit to Greyfriars Kirkyard, June 1976

One of the attractions, after the papers, was a trip to Greyfriars Kirkyard (Fig 7), where Haldane Tait, (wearing glasses, centre left), described the features of medical historical interest. Fig 7 also shows Nick Gordon, (towards the rear, with a moustache), a stalwart in these years, and secretary from 1975 -1981.

In 1986, the Scottish Society was host to the 11th Congress of the British Society of the History of Medicine (BSHM) which was held in Edinburgh. 113 people attended the meeting, many of them staying in the Pollock Halls,

with papers in the RCSEd. The theme of the Congress was Medicine Furth of Scotland. 12 papers ranged from the movement of Scottish doctors within medieval Europe to the influence of Scots on the development of Medicine in North America, Africa and Australasia. The Proceedings were published as *The Influence of Scottish Medicine*, edited by Derek Dow, one of the two SSHM joint secretaries.

In 1987, mainly through the efforts of Dr Martin Eastwood (SSHM Treasurer 1977-1993), a Presidential Badge was introduced, funded by the Guthrie monies and produced by Kirkwood and Sons of Edinburgh.

In 1992, two years after the death of Haldane Tait, the Society instituted a Lecture and Dinner in his memory.

In 1994, the Society helped in planning and running the 34th Congress of the International Society of the History of Medicine (ISHM) in Glasgow.

Music and Medicine

There is much talk currently about medicine and the humanities and I'd like to look now at two meetings in the 1980s and 1990s on Music and Medicine.

In 1985 at the 114th meeting in Melrose, Eric Gilmour, formerly surgeon at Leith Hospital, talked on Music and Medicine, following which he played a Bach gavotte on a spinet that he had built himself. Mike Barfoot, Edinburgh Royal Infirmary Archivist gave the other talk at the meeting, on William Cullen.

Eric Gilmour's playing demanded an encore and this occurred in 1991 at the Spring meeting in Edinburgh, (the 132nd Ordinary meeting), a meeting mainly devoted to Billroth and Brahms. To start the meeting Eric played, on the piano, excerpts from the four Brahms symphonies and this was followed by talks from Iain MacLaren and Iain Macintyre linking Brahms with Theodor Billroth. The last session was a talk by Gerald McInnes on the Loch Maree disaster of 1922 where there five deaths from botulism related to contaminated duck pâté. The audience exceeded 100, a record for the Society, and was one of the most memorable I have attended, remarkable for its interest, erudition, skill and entertainment.

Two memorable members from this period

Margaret Menzies Campbell, (1893-1990), (Fig 8), was born in Darlington, studied medicine at St Andrews, and was rushed into a post as House Surgeon in Doncaster before the end of the First World War, because of a national shortage of doctors. From there she went into general practice with her aunt, Dr Marion Gilchrist, the first woman to graduate from a Scottish university (Glasgow, 1894). In 1924 she married John Menzies Campbell, who became the foremost dental historian of his generation. On his death in 1974, his

books and equipment passed to the Royal Colleges of Surgeons in Edinburgh and London and she devoted a large part of her life afterwards to keeping his memory bright. She was a regular attender at SSHM meetings, from the 1950s onwards and I remember her well in the 1980s. She was active in meetings, presenting papers despite poor eyesight and considerable deafness needing large hearing aids which seemed to deafen all those around without improving her hearing at all. I recall a meeting in 1983 where she was helped on to the stage and pointed towards the audience, whom she could barely see, before she let rip with a firm voice, recalling memories of her mother's medical treatment in the first years of the twentieth century.



Fig 8 Margaret Menzies Campbell
(1893-1990)



Fig 9 Sir Charles Illingworth
(1899-1991)

Sir Charles Illingworth (1899-1991) (Fig 9), was born in Yorkshire and studied medicine in Edinburgh. His training was interrupted by service as a fighter pilot in the Royal Flying Corps. He was shot down over the Somme and was a prisoner of war in Germany until the end of hostilities. After resuming his training in Edinburgh in 1919, he spent some time in the USA and then, back in Edinburgh, wrote two textbooks which made his name. The first, a *Text Book of Surgical Pathology* (1932) was written with Bruce Dick and had twelve editions, the last in 1979. The second, a *Short Text Book of Surgery* (1938) reached nine editions by 1972. He was Regius Professor of Surgery in Glasgow for 25 very productive years, with a major research interest in the effects of hyperbaric oxygen. The school of surgery that he created dominated British Surgery for the next generation, those who had worked in his department filling more than 20 University chairs in the United Kingdom or abroad.

My clearest memory of him is at a meeting in February 1985 in Leith Hospital. Iain Macintyre, SSHM Treasurer (2011-2015), then a surgeon at Leith Hospital, was giving a paper on one of his surgical heroes, Sir David Wilkie, who had also worked at Leith Hospital. Charles Illingworth had worked as surgical tutor under Wilkie and had written an obituary for him on Wilkie's death in 1938. As this was nearly 50 years later, Sir Charles's appearance in the audience was unexpected, but there he was. He had come through from Glasgow that morning on the train and re-invigorated by his recent coronary artery surgery (in his 90s!), had walked nearly two miles from Waverley station to Leith Hospital in the February cold.

The discussion after the paper was one of those wonderful SSHM experiences when the mists of time seem to roll away and the distant past comes vividly to life.

SSHM 1995 to 2014

During this time the membership gradually dropped to around 100 and two joint secretaries reduced to one.

In 1995, following the success of the 1994 ISHM in Glasgow, John Blair and colleagues organised another BSHM Congress, this time in St Andrews.

From 1996 I have records of emails as modern technological advances revolutionised communication between office bearers, members of council, members and the public. Letters, post cards, notices in the paper, photographs to be filed, slides to be made for talks, have now been replaced by emails, websites and electronic images.

In 1997, as both the ISHM meeting in Glasgow and the BSHM meeting in St Andrews made substantial profits, it was agreed to invest these in a trust fund to make small grants supporting medical students in medical history projects. This, the John Blair Trust, continues today, in 2014 making grants of £680 to medical students.

In 1998, the Fiftieth Anniversary meeting was held in Edinburgh and in 2007 another BSHM Congress was held in Dundee.

In 2000, the rather formal arrangements for the Haldane Tait Lecture and Dinner changed from "Dinner Jackets" to "Lounge Suits".

Three memorable members from this period

Alastair Masson (Fig 10a), was born and brought up in Bathgate and graduated in 1947, from Edinburgh. The pay for his first house job was £10 per month, while cigarettes at 3/4d for 20 cost him £5 a month. Following National Service in Iraq, he trained in Edinburgh Royal Infirmary in Anaesthesia with John Gillies and was subsequently a consultant there for

many years. I met him in 1973 and he was a wonderful mentor and source of inspiration for me and many others. He succeeded Haldane Tait as Secretary of the SSHM and was President between 1984 and 1987, going on to become BSHM President between 1991 and 1993. After retiring in 1989 he became increasingly involved with the history of the RCSEd, becoming its Archivist and publishing on its paintings and other treasures.

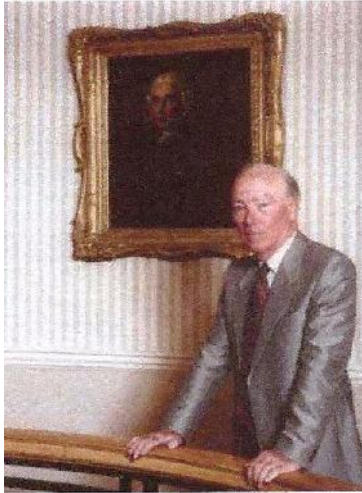


Fig 10a Alastair Masson Fig10b Elizabeth Rose Fig 10c Nick Gordon

Elizabeth Rose, (Fig 10b) was born and brought up in Edinburgh and studied Medicine at Edinburgh where, incidentally, she was awarded a Rowing blue. After working in Keighley, she trained in Obstetrics and Gynaecology at Oxford, before moving back to Scotland. In the 1950s she was appointed consultant at Stirling Royal Infirmary and Airthrey Castle Maternity Hospital. She always had a strong sense of social justice, running family planning clinics, working in women's prisons and being a Campaign for Nuclear Disarmament supporter, marching at Faslane and in Glasgow against nuclear submarines. She continued family planning until well into her 70s, sometimes looking after the grand-children of women she had delivered two generations before. She was the first lady President of the SSHM, (1993 – 1995) and she attended meetings until well into her 90s.

Nick Gordon, (Fig 10c), was an Edinburgh graduate who became a Consultant Anaesthetist at the Western General Hospital (WGH), where one of his main interests was paediatric anaesthesia. He took over from Alastair Masson as Secretary in 1975. David Hamilton joined him as joint Honorary Secretary in 1978 and Nick handed on to me in 1978. Nick was one of the most helpful and enthusiastic people I have ever met. He was hard working, organised and

thoughtful. He was a great teacher and he inspired most of those with whom he came into contact. When I first met him, he had a distinctive moustache, as we've seen in an earlier photograph, but he seemed happier without it in his later years. He almost always wore a bow tie rather than a regular neck tie and he took great pleasure in wearing ones with striking designs. The photograph shows him at the WGH on his fiftieth birthday.

Tragically, for one with so much to live for and who had so much to give, he died before he was sixty, leaving us with a great sense of emptiness. He would have loved to have been here, but he would want us to look forward rather than back.

As a final thought, to allow us to look back properly, we must continue to retain minutes, Proceedings of the Society and particularly, photographs, and record them in a safe and lasting manner.

THE TWO HUNDRED AND FIRST ORDINARY MEETING

The Two Hundred and Second Ordinary Meeting was held in the Royal College of Surgeons and Physicians of Glasgow on 2 March 2015. There were three speakers, Professor Ken Paterson talked on Sir William Macewen and the Princess Louise Hospital, Erskine, Nick Sharrer talked on The Impact of Social Housing on Health; Glasgow and Baltimore, 1940-1980 and Rebecca Crook talked on A 19th Century Patient Journey, through James Murray's Royal Lunatic Asylum.

The material in Nick Sharrer's paper is covered in detail in his 2016 Glasgow University PhD of the same title, which is available to read or download in pdf form at <http://theses.gla.ac.uk/7528/1/2016SharrerPhD.pdf>

A summary of Professor Paterson's paper follows.

SIR WILLIAM MACEWEN AND THE PRINCESS LOUISE SCOTTISH HOSPITAL FOR LIMBLESS SAILORS & SOLDIERS, THE MAN FOR THE MOMENT

Sir William Macewen was born in 1848 in Port Bannatyne on the Isle of Bute. He qualified in medicine at Glasgow in 1869 and made rapid progress in surgery. He was appointed as a surgeon to the staff of Glasgow Royal Infirmary in 1877 and to the Royal Hospital for Sick Children in 1883. By 1892 he was Regius Professor of Surgery at the Western Infirmary. He had a distinguished career which included pioneering operations for rickets, hernia

repair, pneumonectomy and neurosurgery. He was an early proponent of endotracheal intubation and made major contributions to cleft lip and palate surgery for children. He made extensive use of photographs for medical records and for teaching.

His work was recognized by honorary doctorates from Glasgow, Durham, Dublin and Oxford and Fellowship of the Royal Society. He was knighted in 1902 and was Surgeon to the King in Scotland.

In 1914 Britain went to war with Germany. Although the initial hope was that hostilities would be brief, costly battles at Marne (1914) and Ypres (1915), involving trench warfare and heavy artillery, led to large numbers of dead and many wounded, often suffering major limb loss. By mid-1915, over 2000 amputees were on the waiting list for limb-fitting and training at Queen Mary's Hospital, Roehampton, Surrey. Following disquiet in Scotland about the lack of Scottish provision for amputees, a meeting was held at Macewen's home to consider providing an Auxiliary Hospital. Several points were agreed. A suitable building should be identified, a limb-making 'industry' should be established, surgical intervention and training were required and workshops for curative and vocational purposes should be developed. A Public Meeting followed in Glasgow City Chambers on 29 March 1916, chaired by the Lord Provost and attended by a large number of influential people, including the Marchioness of Ailsa and Sir William and Lady Macewen. The purpose of the meeting was to consider proposals for the establishment of a hospital for Maimed and Limbless Sailors and Soldiers in the West of Scotland.

Erskine House, close to the banks of the River Clyde, was offered by its owner, Thomson Aikman, as a site of the new hospital. Sir John Reid, a member of the charity committee, bought the house and estate, for the value of the land only and gifted them to the charity. Princess Louise, Duchess of Argyll and one of Queen Victoria's daughters, was asked to become the patron of the hospital. She agreed, but not before privately noting anxiety within the Royal Household that the new Scottish Hospital should not be seen as a rival to the hospital at Roehampton. Public support for the enterprise was significant, with £100,000, (equivalent to £8m at today's value), being donated within weeks.

Macewen was heavily involved, from the smallest detail, such as the naming of wards and the provision of overcoats for patients, to the most important, such as the appointment of staff. However, when it was suggested to him that he could seek the co-operation of fellow surgeons, he replied "I'll take it up on

one condition – that you don't ask other surgeons to co-operate; I am not a co-operator!"

The first patients were admitted on 10 October 1916 and Princess Louise attended an official opening on 6 June 1917. Most of the patients had had initial amputations carried out under emergency conditions and needed further surgery to revise stumps to facilitate the fitting of prosthesis. Most of these revision operations were carried out by Macewen in the hospital's operating theatre, which overlooked the Clyde.

Prostheses were produced to Macewen's designs, using the skills of carpenters recruited from the shipyards of Yarrow and Arrol, and by December 1917 the hospital had treated over 1600 patients and fitted over 1100 new limbs. Willow was the timber of choice for the prostheses, because of its strength, lightness and flexibility and sources included two willow trees growing in the grounds of Glasgow University, commandeered by Macewen for this purpose. An important aspect of the care offered by the Hospital was the provision of training in various occupations suitable for limbless men and this was carried out in workshops for basket making, hairdressing, shoe making, tailoring and other skills.

By the end of 1918, the hospital had treated 3450 patients, (2697 fitted with prosthetic limbs) and a year later this had risen to 5552 patients, 5250 of whom had been fitted with new prosthetic limbs. The average length of stay at the end of the first year was 28 days. By 1920 some 9500 artificial limbs had been fitted.

In all this, Macewen was the main driving force, the true 'man for the moment'. He directed almost all aspects of planning, personally provided most of the surgical care and led the concept of incorporating training. Though he may have thrived on being in control, it was his dominant personality which allowed bureaucracy to be cut through and outstanding results achieved.

A hundred years later the charity, Erskine, remains as a lasting 'monument' to his effort and example. Its role has expanded to provide care for all ex-service people- most nowadays suffering from degenerative neurological diseases. It still needs £8M per year to keep up its good work. It has moved from the original site at Erskine House and now has two residential homes in the town of Erskine and homes in Glasgow and Edinburgh. The original building, Erskine House, is now a five-star hotel, Mar Hall.

Acknowledgements. Thanks are due to Dr Hugh Conway, former President of the Scottish Society of Physicians, who was consultant to the Princess Louise Hospital at Erskine, to Carol Parry, Clare Harrison and Roy Miller at the RCPSG, Bill McDowall and Leanne Russell at Erskine, Sam Maddra at the

University of Glasgow, Jolanda McNeill at Mar Hall and John Calder, author of *The Vanishing Willows* (1982).

THE TWENTY FOURTH HALDANE TAIT MEETING

EVEREST- THE FIRST ASCENT: THE UNTOLD STORY OF GRIFFITH PUGH, THE MAN WHO MADE IT POSSIBLE

At the Twenty Fourth Haldane Tait Lecture, held at the Craiglockhart Campus of Napier University in Edinburgh, on 13 May 2015, Harriet Tuckey gave a fascinating talk about her father Griffith Pugh, who was a key figure in the first ascent of Everest in 1953. She described Pugh's many contributions to the physiology of those exposed to high altitude, cold and wind, which played a major role in improving safety in inhospitable environments, particularly important in the planning of successful expeditions to climb the highest mountains. The significance of his work was not given due credit at the time and it was many years before it was publicly recognized. Her account of how her relationship with her father developed over the years was very movingly told and her talk was much appreciated by the large audience of 60 members or friends.

The subject of her talk has been published as a book with the same title *Everest – The First Ascent : The Untold Story of Griffith Pugh, the Man who made it Possible* (Rider) ISBN 978-1846043482.

THE TWO HUNDRED AND SECOND ORDINARY MEETING

21 members or friends attended the Two Hundred and Second Meeting, the Summer Meeting of the Society, held in the University Library, Stirling on Saturday 13 June 2015.

The meeting started with two talks on the Royal Scottish National Hospital, (RSNH), the first by Karl Magee, Archivist at Stirling University and the second by Alison Scott, the project archivist for the RSNH archives, which in 2013 were added to UNESCO's UK Memory of the World Register as a collection of outstanding national interest.

Mr Magee began by providing an overview of the NHS Forth Valley Archive, which was transferred to the University of Stirling Archives in April 2012. The archive includes the historical records of a number of hospitals in the

Forth Valley area, including the RSNH. The archive also includes the historical patient records of Stirling District Asylum (later known as Bellsdyke Hospital). This material is particularly rich for the period from the opening of the hospital in 1869 until the end of the First World War. The volumes are being cleaned and listed by a team of student volunteers in preparation for being made available to researchers.

Alison Scott's talk gave further fascinating details of The Royal Scottish National Hospital, which opened in May 1863 as the Scottish National Institution for the Education of Imbecile Children. It was one of the first institutions in Scotland to care for children with learning disabilities and took patients from across the country. The success of the institution is seen in the steady increase in the number of patients, from 43 in 1863, to 120 in 1881, increasing to 350 in 1911. The facilities at the hospital also expanded to accommodate this growing patient population, with new buildings being erected including an infectious disease hospital, covered playgrounds and staff cottages.

Further expansion followed in the 1920s with the purchase of Larbert House and estate. A nurses' home was added and an industrial colony was created where patients could work on the land and learn various trades. In 1948 the institution became part of the National Health Service, ending the charitable status it had held since its foundation. The hospital finally closed in 2002. The site was re-used for the new Forth Valley Royal Hospital which opened in 2010.

Information about the RSNH archive collections is available at <http://libguides.stir.ac.uk/archives/rsnh>

After lunch, there were two further talks. Dr Alastair Durie gave a paper entitled the Radical Mrs Hunter. Mrs Hunter was a Victorian lady of many causes, which ranged from hydropathy through vegetarianism to cremation. This fascinating talk was followed by a paper by Craig Mair on the first fifty years of Stirling Royal Infirmary. Mr Mair's book, *Stirling Royal Infirmary- a History* has been published by Falkirk Local History Society (2011) ISBN-13: 978-0956048042

With this meeting in Stirling, the 2014-2015 session of the Society came to a close.

The Scottish Society of the History of Medicine

REPORT OF PROCEEDINGS SESSION 2015-2016

THE SIXTY SEVENTH ANNUAL GENERAL MEETING

The Sixty Seventh Annual General Meeting was held at the Edinburgh Academy, Henderson Row, Edinburgh on Saturday 7 November 2015. The President, Dr Tony Butler, was in the chair. The Secretary, Mrs Carol Parry, presented her report and the Treasurer, Mr Iain Macintyre, presented the Treasurer's report, which was accepted. These two officers had come to the end of their terms and they were sincerely thanked for their untiring efforts and hard work. Mr Andreas Demetriades was elected Secretary to replace Mrs Carol Parry and Dr Malcolm Kinnear was elected Treasurer to succeed Mr Iain Macintyre. Dr Niall Finlayson was elected as Vice President to succeed Dr Morrice McCrae, who had retired. Three members of Council retired, Professor Sandy Raeburn, Miss Christine Short and Dr Joyce Richardson, and the President thanked them for their contributions. Two new Council members were elected, Dr Iain Macleod and Dr Neil MacGillivray.

THE TWO HUNDRED AND THIRD ORDINARY MEETING

The Two Hundred and Third Ordinary Meeting was held at the Edinburgh Academy on Saturday 7 November 2015, immediately after the Sixty Seventh Annual General Meeting. There were two speakers, Dr Neil MacGillivray talked on the medical and political impact of the 1848-49 cholera epidemic in Scotland and Dr Malcolm Kinnear took as his title "Sailing sun-fronted the vast deeps among": The life of Dr Colin Arrott Browning.

THE MEDICAL AND POLITICAL IMPACT OF THE 1848-49 CHOLERA EPIDEMIC IN SCOTLAND.

Introduction

This paper will focus on the political repercussions of the 1848-49 epidemic, analysing the different approaches to public health in Scotland and England and indeed within Scotland itself. A brief survey of treatment will use the records in the Royal College of Physicians of Edinburgh of over seven

hundred cholera victims and, although they deal with patients from Edinburgh and nearby towns, it is probable that the various therapies documented in the College volumes were used throughout Scotland.

The Epidemic

The second cholera pandemic spread from India along the ancient trade routes to reach Russia in 1847 where within a year one million people died. In Britain fear of cholera was heightened by reports from Europe and by the knowledge that the disease was spreading relentlessly by land and sea following population movements. It was only a matter of time before the epidemic arrived and society's preparations would be tested to the full. Half a century ago Asa Briggs wrote:

'Whenever it threatened European countries, it quickened social apprehensions. Wherever it appeared, it tested the efficiency of local administrative structures. It exposed relentlessly political, social and moral shortcomings. It prompted rumours, suspicions and at times violent social conflicts. It inspired not only sermons but novels and works of art.'¹

There is an extensive historiography analysing the social, medical and economic consequences of the disease revealing the degree to which cholera has fascinated historians: one distinguished historian, Charles Rosenberg, described the 'complex set of attitudes and influences [which] conditioned European and American responses to cholera: humanitarianism, evangelical religion [and] utilitarianism...'. Central to all 'was a faith in means and in the assumption that a mixture of social organization and scientific inquiry would inevitably provide a means of vanquishing cholera'². Social organization and scientific inquiry were seen as the instruments of control; scientific inquiry was increasingly based on statistical analysis, a discipline which developed rapidly in the 1830s and 40s and was used by the protagonists of social change to persuade central and local government to improve conditions in Britain's towns and cities. Parliamentary commissions investigated the health of towns, their sanitary state and the effectiveness of the Poor Law but it was cholera that became the catalyst for change, despite the prevailing, constant dread of fever.

The preoccupation with fever was such that Thomas Ferguson (1900-1977), Henry Mechan Professor of Public Health at Glasgow University from 1944 to 1964, considered that 'it [was] not too much to say that fever dominated Scottish life in the first half of the nineteenth century'.³ Robert Cowan (1796-

1841), first Professor of Medical Jurisprudence and Forensic Medicine at Glasgow from 1839 until his untimely death in 1841, described typhus in the *Journal of the Royal Statistical Society* as ‘that unerring index of destitution.’⁴ Cowan was a founder member of the Glasgow Statistical Society (1836), one of two in Glasgow, whereas Edinburgh had none. Of course, there were limits as to how much statistical enquiries could establish and the debate as to whether cholera was spread by contagion was one such question for which there was no satisfactory answer.

Physicians were undecided as to the mode of transmission of cholera: Dr J. M. Adams of Glasgow wrote in 1849 that ‘individual cases [tended] strongly to show that the affection is propagated by actual contact ...’ but it is typical of the ambivalence felt by many that he qualified this, suggesting that it required ‘the epidemic influence’ to be present for the disease to develop, although he was satisfied that many cases could not be accounted for by ‘the principle of contagion unless by stretching the arguments for that doctrine far beyond the limits of legitimate deduction’.⁵ William Robertson (1818-1882), an Edinburgh physician and statistician, also had misgivings: ‘the question of contagion I shall for the present avoid but think it right to state that three nurses of the Cholera hospital have died of the disease.’⁶ The confusion in the minds of the medical profession is obvious but Adams had doubts also about the preventative measures recommended by the new Central Board of Health, writing:

‘too many agents were concerned in these operations, clashing interests were affected, and views diametrically opposite as to the manner and extent in which the instructions of the Board of Health should be carried out, were held by the principal parties who directed these operations.’⁷ Adams’s criticism was well founded: cholera was feared because of an apparent lack of preparation in Scotland. The *Scotsman* claimed that the Health of Towns Bill before Parliament did not allow for the new sanitary measures to be extended to Scotland and therefore:

‘We are left wholly unprepared, and we greatly fear that our cities and towns will remain as dirty, undrained and ill-ventilated as ever till the actual entrance of the dreaded plague shall arouse us to some feverish efforts of hasty and superficial reformation.’⁸

The Bill became the Public Health Act of 1848 which applied to England and Wales only.⁹ An Act for Scotland did not become law until 1850, after the

cholera outbreak had ceased, although there had been attempts in 1849 to extend the Act to Scotland. That this failed was largely because of objections to the proposed system of administration in which local boards of health were to be answerable to the General Board of Health in London—unwise at a time when local control was jealously guarded.¹⁰ Lack of time to deal with Scottish matters was another factor.

The Government was aware of the danger of not including Scotland: the *Morning Chronicle* reported Lord Morpeth's speech on the Public Health Bill in which he hoped that Scotland and Ireland would 'soon participate in the benefits of the Act' but he had 'judged it best not to encumber this Bill with the variety of provisions necessary for adapting it to Scotland and Ireland; if this Bill should prove acceptable ...I hope my friends and colleagues, especially connected with the Government of those countries, will lose no time in accommodating its provisions to them, in the manner required.'¹¹

Edwin Chadwick (1800-1890) was the leading figure in the sanitary movement, a firm believer in miasma theory and convinced that a central authority was needed to direct local boards of health in the provision of sewers, water and the regulation of nuisances in towns and cities.¹² The Public Health Acts were the result of the evangelical zeal of Chadwick; his *magnum opus* in which he was assisted by Dr Southwood Smith (1788-1861) and Dr Neil Arnott (1788-1874) told of the dreadful living conditions of the labouring population of Great Britain, highlighting the appalling filth and degradation in Britain's slums.¹³ Chadwick visited Scotland in 1840 accompanied by Dr Neil Arnott, William Alison (1790-1859), Professor of Medicine at Edinburgh, and Professor Cowan of Glasgow. In Edinburgh and Glasgow they saw the appalling conditions in which the poor lived and were later to describe them in the Sanitary Report as the worst slums in Great Britain: 'the most wretched of the stationary population of which I have been able to obtain any account, or that I have ever seen, was that which I saw in company of Dr Arnott and others, in the wynds of Edinburgh and Glasgow.'¹⁴

Despite the zeal with which Chadwick preached his "sanitarian doctrine" there remained opposition to the Public Health Bill, based on objections to centralisation, handing control to a central authority, the General Board of Health, which had the power to direct local boards of health in the provision of sewers, water and the regulation of nuisances in towns and cities.¹⁵ Nevertheless, the Bill was passed and Chadwick, Lord Morpeth, the Minister responsible and Lord Ashley were appointed as the three original members of

the Central or General Board of Health set up by the 1848 Act. They were soon joined by Southwood Smith, a physician to the London Fever Hospital, an appointment which was occasioned by the disapproval in the medical press at the absence of doctors on the Board. This absence may have been contrived by Chadwick who perhaps felt that his theories and ideals might be undermined by physicians who had doubts about the miasma theory, doubts which certainly existed in Scotland.

The contagion versus non-contagion or miasma controversy was dominated by Chadwick who claimed that ‘all smell is, if it be intense, immediate acute disease, and eventually, we may say that, by depressing the system and making it susceptible to the action of other causes, all smell is disease.’¹⁶ Chadwick’s “ultra-sanitarianism” conveniently ignored evidence which refuted his theory, but he had the ear of government and enthusiastic supporters in the medical profession, Neil Arnott and Southwood Smith being the most prominent.

The situation in Scotland was different—during the 1831-32 epidemic doctors believed that cholera was contagious and for a time there was even a partial quarantine around some Scottish cities. However, by the 1840s there was less certainty and although miasma theory was gaining support, a reluctance to adopt it entirely was evident, reservations perhaps influenced by Alison who did not believe that filth per se caused disease. Whatever their views as to disease causation the medical profession knew that before long cholera would reach Scotland. In August 1848, Professor Robert Christison (1797-1882), President of the Royal College of Physicians, stated that Edinburgh Town Council had requested a conference with the College on the subject of the prevention of cholera but at that time ‘it appeared to all parties premature to take any steps.’¹⁷ In fact, it was not until 29 September that a meeting of the two College presidents and the civic authorities, including the parochial boards, took place—a strange lack of urgency when days later the first case of cholera was diagnosed in Newhaven, near Edinburgh, and on 2 October there was a case in Edinburgh followed by one in Leith on 9 October.

At an extraordinary meeting on 12 October Christison informed the College that in late August he told the Lord Provost ‘the necessary precautions ought to be no longer delayed’ but it was only at the October meeting that ‘the steps to be taken by the College with reference to the present appearance of cholera in Edinburgh’, were debated. Christison went on to say that although all were anxious to implement measures to deal with the threat, by the Act for removal

of nuisances and prevention of epidemic diseases the initiative had been taken from local authorities and given to the General Board of Health in London. Without the approval of the London Board nothing could be done, except for cleaning and removing nuisances, and accordingly 'the Lord Provost was instructed to beg that the Board would immediately announce the measures which they deemed advisable, because the Cholera had appeared in more quarters of the city than one since the 1st instant.' Christison announced to the meeting that a Local Board of Health had been formed on 11 October chaired by the Lord Provost, Adam Black, with Sir John McNeill (1795-1883), Chairman of the Board of Supervision for the Poor, and the two College presidents as members.¹⁸ The meeting was told that Lord Ashley from the Board of Health had arrived from London to liaise with the local board and directions had been drawn up for the parochial boards, but the local board had delayed their implementation 'on account of a doubt being entertained as to the extent of the Powers conferred by the General Board of Health upon the Local Board.' Christison had earlier written to Chadwick, 'urging the necessity of immediate measures' claiming that 'nothing further could be done by the Magistrates or the Police or the Parochial Boards without authority first given by the General Board of Health'. He requested the Board waste no time in announcing what ought to be done, adding for their benefit a list of eight propositions or demands—as a result of this letter the Board sent Dr John Sutherland (1808-91), born in Edinburgh and an Edinburgh graduate of 1831, to liaise with the local board.¹⁹

In Scotland, Town Councils had little or no control over sanitary matters, which were the preserve of another municipal body, the Police Commissioners, and, as has been pointed out, 'public health reform fitted seamlessly into the police commissioners' remit.²⁰ This body carried out its functions through a Cleaning Committee whose paid functionary was the Inspector of Cleaning and Lighting, by no means a public health official. During the 1832 epidemic a specially constituted Local Board of Health was in place, composed almost entirely of medical officers on whose knowledge the Police Commission were reliant. This was very different from the Chadwickian model in which doctors were largely excluded and control given to the parochial boards.²¹

The Local Board set up in Edinburgh found itself unable to act, the 1848 Act stating that the General Board had no authority to delegate powers except to the parochial boards. A meeting of the Edinburgh parochial boards with the Lord Provost and the two College Presidents decided that expenses would be

allocated according to the number of cholera cases in each board area. However, this scheme came to naught when later the St Cuthbert's board decided not to combine with the other boards because 'it was inexpedient' and that the druggists in their parish would supply the necessary medicines to cholera patients.²² The Local Board disagreed with the Central Board over cholera hospitals, the latter body saying that it was unwise to remove patients from their own houses, whereas the Local Board disagreed, declaring that in Edinburgh many of those affected lived in conditions where home management was impossible.²³

In Glasgow there was less conflict. By early October it was reported that 'scouring, scrubbing, washing, paving and draining are going on all over the lower parts of the city at a great rate. Nuisances are disappearing in all quarters...'.²⁴ Glasgow was the first city in Scotland to introduce house visits, to provide medicines, to identify victims and to ensure that bodies were removed, but despite these measures there remained a fatalism: 'the disease was deemed by many to be the creature of divine Providence, and therefore beyond secular intervention.' The Central Board of Health appointed superintendents to the Barony and City parishes and house to house visits were instituted using medical students who were paid to find cholera cases and bodies.²⁵ The point was made also that only one quarter of patients were treated in hospital for the simple reason that there was never enough room.

There was another angle in Scotland, that of Alison and his supporters, who did not believe that sanitary improvement alone should be paramount; Alison had led the campaign for a new Scottish poor law, emphasising the relationship between destitution and epidemic disease. The new Poor Law of 1845 was the result and perhaps damped down debate between pro contagion and those against. A College of Physicians committee headed by Alison recommended that the Scottish Board of Supervision (a Poor Law body) should be the central sanitary body for Scotland, a proposal which did not find favour in London, who wished to keep central control nor was it well received by Town Councils and Police Commissioners. The debate over central or local control was not the only battleground. Pickstone makes the point that there were two views of public health: the first being that of Chadwick and other 'ultra-sanitarians' who believed that 'epidemic disease was primarily the product of dirt and decomposing matter' and could only be remedied by public health engineering; the second was the model of 'dearth' from agricultural failure and food shortages.²⁶ A further issue of course was the uncertainty about whether cholera was contagious, which led to many of the

disagreements about prevention and treatment. The war of words occasioned by the protagonists was exacerbated by a lack of clarity in defining the exact meaning of the terms in use: infection and contagion. The Glasgow physician, Dr Alexander Stewart (1813-1883), claimed with justification that these two words had caused more difficulty than any two terms in science.²⁷

Treatment

The Board of Health not only ruled on sanitary matters but also advised on treatment. Dispensaries were to be established to provide medicines for bowel complaints, thought to be an important preventative measure, and of course the Board recommended the drugs which were to be used.²⁸ They were not in favour of cholera hospitals, claiming that home care was preferable, but despite this cholera hospitals were established in Scottish cities.

The cholera records in the Edinburgh College of Physicians show that treatment was mainly directed to relief of symptoms. Intravenous saline was used, but in small amounts, a treatment first used in the 1832 epidemic in Edinburgh and Leith by Dr Thomas Latta (d.1833) based on the work of Dr William Brooke O' Shaughnessy (1809-1889) who had shown that there was a lack of fluid and salts in the circulation. Latta chose patients on the brink of death and had a modicum of success, injecting copious amounts of saline into the venous circulation. Latta died in 1833, O' Shaughnessy joined the East India company medical service, events which may explain why intravenous saline was seldom used sixteen years later. The persistent use of venesection and bleeding is less easily explained but its popularity was widespread. The Glasgow Professor of Medicine, Andrew Buchanan (1798-1882), wrote that 'bleeding when practised at an early period seems to be chiefly serviceable by diminishing the quantity of black blood which would suppress the system.... it is highly dangerous when attempted after the pulse has begun to sink, as it has then been found to induce an immediate and fatal collapse.'²⁹ Not all doctors were as observant – sadly bloodletting remained the most common way of ending the lives of many cholera victims.

Conclusion

In Edinburgh 448 people died and in Glasgow the death toll was 3,800; the Edinburgh death rate was sixty-four percent, in Glasgow forty-five percent, figures based on Board of Health statistics. These also showed that in Glasgow cholera hospitals the death rate was fifty-three percent whereas with home care it was considerably lower at thirty-seven percent.

References and notes

1. Briggs, A., 'Cholera and Society in the Nineteenth Century', *Past and Present*, 19, (1961), p.77.
2. Rosenberg, C.E., *Explaining Epidemics and other studies in the history of medicine*, (Cambridge, 1992), p.117.
3. Ferguson, T., *The Dawn of Scottish Social Welfare*, (Edinburgh, 1948), p.116.
4. R. Cowan, 'Vital Statistics of Glasgow', *Journal of the Statistical Society*, (1840), p.289.
5. J.M. Adams, *Observations on the Epidemic Cholera chiefly as it prevailed in the 13th Medical District of the City Parish, Glasgow*, (Edinburgh, 1849), p. 12.
6. Robertson, W., 'Some Account of the Practice in the Cholera Hospital in Surgeon Square', *Monthly Journal of Medical Science*, ix, new series, vol. iii, (1849), p. 394.
7. Adams, *Observations on the Epidemic Cholera*,
8. *Scotsman*, 12 August 1848.
9. *Act to amend the Nuisance Removal and Diseases Prevention Act, 1848*, 12 and 13 Vict. Cap 111.1849.
10. Macdonald, H., "Public Health Legislation and Problems in Victorian Edinburgh with Special Reference to the Work of Dr Littlejohn as Medical Officer of Health", Unpublished PhD thesis, University of Edinburgh. (1972).
11. *Morning Chronicle*, 11 February 1848.
12. Porter, R., *The Greatest Benefit to Mankind. A Medical History of Humanity from Antiquity to the Present*, (London, 1999), pp. 410 & 411.
13. *Report on the Sanitary Condition of the Labouring Population of Gt. Britain*, by Edwin Chadwick edited with an introduction by M.W. Flinn, (Edinburgh, 1965).
14. *Report on the Sanitary Condition*, pp. 97-99.
15. Porter, *The Greatest Benefit to Mankind*, p.411.
16. H.J. Dyas and Michael Wolff, (eds), *Victorian City*. vol. 2, (London, 1973), p. 681.
17. Minutes of Royal College of Physicians of Edinburgh, 1 August 1848, p.3731.
18. College Minutes, 12 October 1848, pp.3733-3741.
19. College Minutes, 5 October 1848, pp. 3734-3740, Letter to E. Chadwick.
20. Brunton, Deborah, in Sturdy, Steve (ed.), *Medicine, health and the public sphere in Britain, 1600–2000*, (Routledge Studies in the Social History of Medicine, London and New York: Routledge. 2002), p.174.
21. Macdonald, "Public Health Legislation and Problems in Victorian Edinburgh". Macdonald explains how administrative tasks were shared by the Town Council, the Police Commission and the Fever Board, pp.6-10.
22. *Caledonian Mercury*, 5 October 1848, 9 October 1848; Anon, 'Sanitary Precautions against Cholera', *Monthly Journal of Medical Science*, ix, 1848-49, pp. 351 & 352.
23. *Caledonian Mercury*, 19 October 1848.
24. *Glasgow Herald*, 11 October 1848.
25. W. Hamish Fraser and Irene Maver, *Glasgow*, volume II: 1830-1912, p.402.
26. Pickstone, J. V., 'Dearth, Dirt and Fever Epidemics: rewriting the history of British 'public health', 1780-1850 in T. Ranger and P. Slack, (eds.), *Epidemics and Ideas*, (Cambridge, 1995), pp.126-128.
27. Stewart, A., 'On the nature and Pathology of Typhus and Typhoid Fevers,' *Edinburgh Medical and Surgical Journal*, 54, 1840, pp. 295-296.
28. *Lancet*, ii, 1848, pp.462 & 463.
29. A. Buchanan, *Observations on Malignant Cholera*, (London, 1848), pp.41-42

'SAILING SUN-FRONTED THE VAST DEEPS AMONG' - THE LIFE OF COLIN ARROTT BROWNING MD (1791-1856), NAVAL SURGEON, CONVICT SURGEON-SUPERINTENDENT AND AUTHOR

Dr Colin Arrott Browning has recently become a figure of some historical interest for two reasons. Firstly, he was a significant figure in the field of British convict transportation to Tasmania, which has been described as the most effective system of criminal rehabilitation in penal history & to which he made a major contribution, both in terms of his ability to render the transportation voyage a transformative experience for the convicts through his assiduous attention to education and moral reform, and also by his documentation of this process for the reading public in his books 'England's Exiles' [1] and 'The Convict Ship' [2], which were widely read and admired by his contemporaries. Secondly, one of his several grandsons (whom he never met, having died long before their births) was the poet Walter John de la Mare (1873-1956), whose biographer, the late Theresa Whistler, identified Colin as a key figure in the poet's antecedents and imagination, due to his influence on the poet's mother Lucy Sophia de la Mare née Browning [3]. There has been to date no complete & accurate account of Colin's life, his entry in the Australian Dictionary of Biography containing inaccuracies [4], partly because historians who have taken an interest in his convict transportation work have apparently not sought access to sources regarding his naval career and family background, and partly because one of his own great-nephews rewrote Arrott Browning family history for his own reasons, after losing access to family papers which have only recently been recovered. This article is intended to provide an accurate timeline of his life in order to facilitate future study of his work.

Early life & education

Colin Arrott Browning was baptised in Auchtermuchty, Fife on February 24th 1791, the second son of Antiburgher Presbyterian minister Rev James Browning (1749-1825) and Magdalen née Arrott (1767-1831?) [5], daughter of William Arrott (1720-1811), Laird of Dumbarrow, Forfarshire [6]. James Browning came from Ayrshire, where he had been a Church of Scotland schoolmaster in Kilwinning before entering the ministry in 1785, and he probably met the Arrott family while being interviewed for a living in Arbroath [7]. However, he decided instead to accept the living in the Fife town of Auchtermuchty, where he remained for the rest of his life, publishing four highly regarded volumes of sermons [8][9]. The Arrotts were a small but enterprising family of Angus minor landowners who had been active in the Presbyterian Church of Scotland for over a century, either as ministers or

elders, and intermarrying with other ministerial families such as the Riggs, Oliphants, Willisons and Bells [10]. Through his documented Oliphant ancestrix, Colin was a direct descendant of King Robert the Bruce and, through him, of the ancient royal houses of Scotland and Wessex, although it is unlikely that he was aware of this. The Arrotts supported the Antiburgher Secession of the early 18th Century, a movement which held that a church congregation rather than the heritors should choose their minister. Magdalen's grandfather Rev Andrew Arrott (1683-1760) went so far as to build his own church on the family estate of Dumbarrow in order to provide a place of worship for local Antiburghers [10]. Little is known of Colin's early life. Contemporary accounts of his brothers Rev David Cunningham Browning (Presbyterian then Anglican clergyman, chaplain to Newcastle Gaol, and active in local scientific societies), Leven Browning ('a man of extensive reading and broad ideas; he was fully informed upon all political subjects, and might have commanded the popular support in politics') [11] and William Browning (who supported himself as a classics tutor in Edinburgh) [12] suggest a high standard of education within the family. Other siblings are known to have stayed with Arrott relatives in Arbroath in order to attend Arbroath Academy, Auchtermuchty's educational facilities being very limited, and it is quite possible that he did so too. He is known to have maintained a lifelong correspondence with his Arbroath-based maiden aunt Miss Grant Arrott (1772-1863) [13], none of which survives, although the family possesses a number of his letters to others. There were already medical men in the family, notably his uncle Dr William Arrott (1774-1862) of Arbroath, two of whose sons, Dr James Arrott (1808-1883) & Dr David Arrott (1809-1876) subsequently had distinguished careers in Scottish medicine [14]. His family's financial status did not permit Colin to take a first degree at university unlike his uncle (MA at St Andrews), and it is likely that Colin was apprenticed to physician, former clergyman and founder of the Gaelic Schools Society, Dr Charles Stuart of Dunearn (1743-1826) in Edinburgh [15] and attended classes at Edinburgh University before passing the examination for the Licentiate of the Royal College of Surgeons of Edinburgh on 10th May 1813 [16]. He then joined the Royal Navy (RN) as Assistant Surgeon, there being precedent in a distant cousin, Dr James Arrott (1742-1818) of Foffarty, latterly of Seaforth House, near Arbroath, who had served in the RN in the mid-18th Century before settling in Edinburgh [16] and who had been supportive of the young William Arrott in his studies [14].

Naval career

(NB, by convention, the number in brackets after a warship's name is the number of cannon carried)

He was first appointed to the battleship HMS Dannemark (74), and in 1815 was serving in the gun-brig HMS Hasty (16) [17], during which commission he had care of men wounded at Waterloo [13]. He was fortunate at the end of the Napoleonic Wars to be appointed to frigate HMS Hebrus (36), Capt Edmund Palmer, which formed part of Admiral Lord Exmouth's task force for the bombardment of Algiers on 27 August 1816 [17]. Hebrus was under fire and suffered some casualties (one midshipman & three seamen killed; one midshipman, ten seamen, one marine, two rocket-troop, and one boy wounded) during the action. Following this he was promoted to full Surgeon as of 8 February 1817 [17], but immediately placed on half-pay in the massive naval reductions after the Napoleonic Wars, this however providing a small regular income which he was reportedly able to save towards furthering his education [3]. His activities during the next seven years are not known, but the provisions of his father's will [18] suggest that he and other brothers may have left Great Britain, possibly for the USA, where his younger brother Leven Browning (1796-1857) settled in Lauderdale County, Tennessee, owned slaves and gave rise to many descendants including the writer Roark Bradford (1896-1948) [11]. Another brother, Alexander Robertson Browning (1797-1848) joined the RN as Assistant Surgeon, serving in the Packet Service out of Falmouth [17]. Certainly by 1824 Colin was back in Scotland, where he studied for his doctorate at Edinburgh University, being awarded the degree of M.D. on 1 August 1825 for his rather conventional Latin thesis 'De Febro Sanguine Mittendo' ('Concerning Blood-Letting in Fever'), which he dedicated to Professor Baird, Dr Charles Stuart, Rev John Jamieson and Sir William Burnett [15]. He had married Eliza Green (1800-1863), daughter of Samuel Green, surveyor, of Sevenoaks, Kent on 21 July 1825, de la Mare family legend stating that he had 'found his ideal sweetheart and won a kiss at first encounter' [3].

He was rapidly re-employed by the Navy and appointed as Surgeon to HMS Isis (60) for the West Indies, but seems not to have taken up this post, instead being appointed in rapid succession to HMS Victory (100), HMS Espiegle (18), HMS Victory again, HMS Spartiate (74) and HMS Ocean (98) [17]. On 19 March 1828, he was appointed to ship-sloop HMS Alligator (28), Capt the Hon William Pitt Canning, and sent to the Halifax station. On 19 July 1828 Alligator was at the Tagus in Portugal. We are fortunate that the Surgeon's Log of HMS Alligator [19] has survived in the National Archives, from which we learn that Alligator's cruise was distinguished by heavy weather, an extensive sick list and the accidental drowning of Capt Canning in a water tank ashore on 24 September 1828 during a visit to Madeira. Colin made heroic efforts to resuscitate his well-connected young Captain, including tracheotomy, and

wrote an extensive report to the Admiralty regarding the event [20]. He also wrote recommendations into his Surgeon's Log that the Admiralty should provide greater quantities of certain medications and sickbay utensils, the existing establishment having proved unequal to demand, and that a rating of Sick Nurse should be created to ensure better care for ill and wounded seamen, stating that 'if there is one man more useless and stupid than another, that is the man that will be fixed upon to nurse the Sick!' Alligator returned to Portsmouth with Capt Canning's remains on 15 November 1828, Colin having performed a late post-mortem examination en route. On 4 December 1829, Alligator sailed from Sheerness for Portsmouth, arriving 6 December, then appears to have sailed to Leith & back, arriving back on 13 December with volunteers for HMS Druid. He remained with Alligator for her next voyage, to the Mediterranean, under Capt Charles Yorke. His last regular Navy appointment was from 14 July 1830 to frigate HMS Hyperion (32), Capt William James Mingaye, depot ship for the Revenue Service at Newhaven on the south coast of England [17], during which time he lived in a RN cottage on the cliffs at Rottingdean and was active in visiting the various cutters employed in anti-smuggling patrols [13]. During the last months of this commission his daughter Augusta was born, on 24 February 1831. At least one, and possibly as many as three, children born to Colin and Eliza in Kent had died before this time [21], a tragedy which may well have heightened his longstanding nonconformist evangelical interests. It is probable that his mother Magdalen died in 1831 too.

Convict transportation career

On 23 June 1831, he took up his first appointment as Surgeon Superintendent of a convict ship, aboard HMCS Surry (sic) embarking 200 convicts at Portsmouth on 11 July [22]. His experiences in this commission influenced his subsequent treatment of convicts, notably his aversion to corporal punishment. After time ashore with his family in Brighton, during which his son Colin was born on 6 May 1833 [23], he requested another convict ship and was appointed to HMCS Arab from 25 January 1834, sailing on 26 February 1834. Arab arrived in Hobart, Van Diemen's Land on 30 June 1834, and went on to Sydney [24]. Having returned to Great Britain, he was then appointed to HMCS Elphinstone on 16 December 1835. Elphinstone arrived at Hobart on 24 May 1836. His second son Arthur was born on 26 May 1836. He was appointed to HMCS Hercules on 23 January 1838, taking up post on 5 February 1838, just before the birth of his daughter Lucy (future mother of the poet Walter John de la Mare) on 12 March 1838 [25]. On his return, he was a patient in Plymouth Hospital with fever from 14 June to 3 July 1839. He was appointed to HMCS Margaret on 16 March 1840 and had all his children

baptised at the Chapel Royal in Brighton on 25 March 1840 [13] before his departure from Dublin with 131 female prisoners on 30 April 1840, arriving in Australia on 17 August 1840 [26]. His son Herbert was born on 29 September 1840 [25]. He remained in Hobart until 1841 due to fever from an infected wound received while performing a post-mortem aboard ship, during which illness he was nursed by his convicts. He reported his return to Great Britain on 16 February 1842. He was speedily appointed to HMCS Emily, but on 9 May 1842 requested that his appointment should be cancelled due to 'most urgent private affairs', and he was put on half-pay. Sir William Burnett (who was a native of Montrose & would have known the Arrott family) [27] granted him a certificate of 'superior talents, great personal worth and high moral character' on 5 July 1842. It is likely that this was due to his candidacy for the Governorship of the newly built Pentonville Prison, London, in which he was unsuccessful [28]. On 6 September 1842, he was appointed to HMCS Earl Grey, sailing on that date and arriving on 14 January 1843. He described this voyage in his best-known book 'The Convict Ship' [2]. On his arrival in Hobart he was requested by Lady Franklin, the Governor's wife, to remain in order to set up a reformatory for female convicts [4]. Following a period ashore in England, he was appointed to HMCS Theresa on 26 February 1845, sailing on 1 April 1845 and arriving on 3 July 1845, a very rapid passage. Theresa went on to Sydney, arriving 15 August 1845. His youngest son Hamilton was born at about this time [25]. On 17 January 1846, he took passage on the William Metcalfe from Sydney to Britain. He was appointed to HMCS Pastonjee Bomarjee on 22 September 1846 [29]. During this voyage his son Arthur, a pupil at All Saints School, Hertford, died of typhus aged ten years on 1 November 1846 [25]. Pastonjee Bomarjee's destination was Norfolk Island, where the cruel treatment of recidivist convicts by commandant John Giles Price had horrified popular opinion to the extent that the government dispatched the transport to move nearly 200 prisoners to Hobart. Colin's confrontation with Price on arrival was witnessed by one of the convicts, who later recorded it verbatim in his memoirs - he insisted that Price remove all manacles from the convicts before embarking them, refused to accept Price's disagreement on this matter, and appealed directly to the convicts in support of the safety of his decision. This action had no ill consequences due to the confidence he inspired in the convicts that he was only concerned with their wellbeing [30]. It is worthy of note that Price was murdered by a group of convicts several years later. On 12 November 1848, he was appointed to HMCS Hashemy, his last convict ship, and indeed the last convict ship to sail to mainland Australia [31]. Hashemy sailed on 22 November 1848 with 237 male convicts, Colin noting the appearance of what

would later be called hysterical symptoms among convicts who had been transferred from solitary confinement [1]. From 3 December 1848, the ship was in the grip of a major cholera outbreak which required the ship to remain at Spithead while the Admiralty provided a hospital hulk with extra medical staff and supplies. His treatment of the afflicted, which included mercury, fluids & farinaceous food, was sufficiently successful that the mortality rate was approximately 10%. Colin was also an enthusiast for the liberal use of his patron Sir William Burnett's (notoriously patented) Zinc Chloride solution [27], which has some antimicrobial properties and may have contributed to higher hygiene standards in his sickbay. Hashemy eventually sailed from Spithead on 11th January 1849 and arrived in Sydney on 22 June 1849, prompting a riot among free colonists who opposed further convict transportation. He commented sharply that his convicts behaved better than the rioters! [1]

Dockyard appointment & death

While aboard Hashemy, he had been promoted to Deputy Inspector of Hospitals and Fleets in the reorganisation of the Navy Medical Department by Sir William Burnett, and Colin was appointed to be Surgeon Superintendent of Woolwich Dockyard on the Thames (which had its own substantial establishment of convicts engaged in dockyard works) from 13 February 1850 [17], and duly relocated his family to a house in the dockyard, later acquiring a house he named 'Dumbarrow Cottage' on Maryon Road in nearby Charlton. By 1856, he was considering retirement to the London suburbs [32], but fell ill during that summer, visiting Brighton for the sake of his health [33], and died of stomach cancer on 23 October 1856 [25], [34]. His widow Eliza survived him until 1863, and the family possesses a photograph of her, dated 1860, taken by her son-in-law Rev William Michell. (Figure 1). No image of Colin himself has so far come to light.

His eldest surviving son Colin Arrott Robertson Browning CIE, (1833-1908), was educated at Brighton College & Cambridge University, and had a distinguished career in the Indian Educational Service [23]. His elder daughter Augusta Martin Browning, (1831-1905), married Anglican clergyman, educationalist and diarist Rev William Michell (1830-1917) [13]. His favourite child, younger daughter Lucy Sophia Browning (1838-1920) married Bank of England official James Edward de la Mare (1812-1877), one of the children of this marriage being the poet Walter John de la Mare (1873-1956) [3]. Colin corresponded with Lucy while he was at sea and it is likely that at least some of these letters survive in the uncatalogued Walter de la Mare papers in Oxford. Son Herbert Browning (1840-1864), a Civil Service

clerk, died of tuberculosis [25]. His youngest son Hamilton Samuel Browning (1845-1864?), 'a funny little fellow who says the most out of the way things' 'ran wild and vanished' [3].



Fig 1 Eliza Browning (1800-1863), (wife of Colin Arrott Browning) (Family)

Other notable members of his extended family include: emigrant uncle James Arrott (1777-1859) who lent money to the US government and finished his life as US Consul in Belfast [6]; emigrant cousin James West Arrott (1835-1902), inventor of the Ideal Standard porcelain process; cousin Dr James Arrott (1808-1883), first physician to Dundee Royal Infirmary and pioneer of the Laennec stethoscope in Scotland [14]; nephew Arrott Browning (1838-1877), international railway and canal engineer who was responsible for the surveying of the first railway between Durban and Pietermaritzburg in South Africa [35] and whose four brothers emigrated in the 1860s to run the first steamboat service on Lake Muskoka in Ontario, Canada [36]; grandson Major Arthur Robertson Browning (1860-1901), Indian Army officer killed leading a charge in the Boxer Rebellion [23]; grandson Lt-Col Herbert Arrott Browning (1861-1951), Indian Army officer and colonial administrator, latterly Governor of the Andaman Islands [23]; nephew Captain George Alexander Browning (1838-1915) RN, navigator and hydrographer, after whom Browning Passage off British Columbia is named and great-nephew Rev Guy Arrott Browning (1876-1916) RN, killed in action aboard HMS Indefatigable at Jutland [37]. One of Colin's grand-daughters, Evelyn Grace Michell (1868-1964) married a grandson of sanitary reformer and first Chairman of the

Metropolitan Board of Works, Sir John Thwaites (1815-1870).

Controversy regarding family history

Colin's family history was subsequently made a subject of confusion by his great-nephew George Elliot Browning (1867-1939), who had been deprived of his inheritance of family documents, while absent in India building railways, and later constructed a speculative and demonstrably inaccurate Browning family tree which he published in Burke's Landed Gentry [38]. This is the likely origin of the statement in the Australian Dictionary of Biography that Colin 'probably descended from the 1720 marriage of John Browning of Garter Court and Christian Arrott of Dumbarrow' [4], a marriage for which there is no positive and much negative evidence as the Arrott family history is very well documented and marriage into a distant English gentry family would not have been omitted. Surviving Scottish archive evidence suggests that Colin's Browning antecedents had been resident in Lanarkshire and Ayrshire since the 16th Century and had no connection with any English Browning families such as the West Country family of poet Robert Browning. The missing family documents were recently recovered by the Browning family following their sale to a dealer by the successors of the Carlisle solicitor into whose keeping they had been (possibly unwisely) entrusted over a century before.

Character

Some estimate of Colin's character can be made from his books, logs and correspondence, as well as contemporary accounts from family members & acquaintances. Bateson described him as 'kindly but narrow-minded' [39]. Colin himself recorded his own indignation when a musician started playing as convicts were being embarked, and his stern insistence that it cease forthwith does not sit well with modern sensibilities. He clearly took his duties very seriously, and in common with most surgeon-superintendents seems to have earned the gratitude of his charges for his care, in whose support he was prepared to challenge authority [40]. However, he was described as 'romantic and impulsive' within the de la Mare family, and allegedly 'quarrelled bitterly with his naval superiors' [3], although over what is not clear and it does not seem to have harmed his career as he clearly enjoyed the confidence of his superior Sir William Burnett. There is evidence of the influence of his former mentor Dr Charles Stuart (who had, extraordinarily, resigned his Cramond living on principle, stating that he could 'find no scriptural warrant for presbytery', and became an Anabaptist), in that Colin used the characteristic Anabaptist punishment of 'shunning' for offences, and emphasised the personal relationship of each convict with God rather than via established

Church activity, of which he appears to have retained some suspicion, only baptising his own children when his eldest was nearly ten years old [13]. His relationship with his favourite daughter Lucy appears to have been warm and affectionate, although as previously noted he was a strict disciplinarian and not averse to administering corporal punishment to his own children (it was said of him that 'he treated his convicts like children & his children like convicts') [3]. Professionally, he seems to have been competent and conventional, performing postmortem examinations at sea to establish cause of death, bemoaning the tendency of sailors to abuse strong drink and to seek medical attention late, and advising the Admiralty to create a new Sick Nurse rating with enhanced pay [19]. There is some suggestion that he might have been prone to anxiety himself, in that his nephew reported his opinion that this was the case during what in fact proved to be Colin's last illness [33]. His brother William was noted to have become despairing in later years and of sufficient concern that the family considered paying the fare to send him to America for a fresh start [41], and his daughter Augusta reportedly had periods of nervous disorder exacerbated by brandy necessitating discreet private treatment (it should be noted that Walter de la Mare was impressed by his aunt's formidable character and used her as a prototype for his vampiric character 'Seaton's Aunt' [3]), possibly suggesting some family vulnerability to depression.

Significance

Colin's two books about convict transportation '*The Convict Ship*' [2] and '*England's Exiles*' [1] were highly successful and were revised and expanded to a total of nine editions. They are primarily concerned with the Christian evangelical aspects of transportation, rather than medical or social. Contemporary accounts and retrospective analysis concur that Colin was a man of strong and kindly character, much beloved of his charges, who appear to have responded well to his manifest concern for their welfare, although it has also been stated that he was much deceived [42]. His policy aboard ship was to avoid physical punishment altogether and to provide a moral rehabilitative experience for the convicts, which was particularly characterised by his concern for their education, notably literacy, in which he achieved significant improvements. His published works are preoccupied with man's unworthiness and need for salvation, which has tended to alienate modern commentators such as Bateson. His major achievements were the delivery of some 2000 healthy, mostly literate and well-behaved convicts to Van Diemen's Land over the course of his fifteen-year career as Surgeon Superintendent on convict ships, which was appreciated by the authorities, and the influence that his written works exerted on public attitudes to punishment and rehabilitation.

References

- 1 'England's Exiles' by Colin Arrott Browning (first published 1842)
- 2 'The Convict Ship' by Colin Arrott Browning (first published 1844)
- 3 'Imagination of the Heart: The Life of Walter de la Mare' by Theresa Whistler (pub Duckworth, London 1993)
- 4 Colin Arrott Browning' in 'Australian Dictionary of Biography' pub Australian National University
- 5 Old Parish Registers of Scotland
- 6 'Brief notes on Arrott family of N Ireland, taken from recollections of James Arrott' 1859 (University of Birmingham, Cadbury Research Library Special Collections)
- 7 'History of the Congregations of the United Presbyterian Church from 1733 to 1900' by Rev Robert Small (pub David M Small, Edinburgh, 1904)
- 8 'Jesus Christ the true god: a sermon. In which the divinity of our Lord Jesus Christ is proved, illustrated' by Rev James Browning, 1792
- 9 'Four sermons, delivered on public occasions: on Gospel preaching, God all-sufficient for his servants, The Church's low but hopeful case, On understanding the signs of the times' by Rev James Browning, 1803
- 10 'Fasti Ecclesiae Scoticae : The Succession of Ministers in the Church of Scotland from the Reformation' by Hew Scott (pub Oliver & Boyd, Edinburgh 1928)
- 11 'A History of Tennessee from the Earliest Times to the Present, together with an Historical and a Biographical Sketch of Lauderdale County' (pub Goodspeed Publishing Company, Nashville, TN, 1886-1887)
- 12 1861 Census Edinburgh
- 13 'A Victorian Clergyman: The Diary of Rev William Michell' 1830-1917 edited by MC Eagle & PR Kinnear (pub Amazon, 2010)
- 14 'Eminent Arbroathians : Being Sketches Historical, Genealogical, and Biographical' by M'Bain (pub Brodie & Salmond, Arbroath 1897)
- 15 'De Febro Sanguine Mittendo' by Colin Arrott Browning (thesis for MD, Edinburgh University, 1825)
- 16 Records of the Royal College of Surgeons of Edinburgh
- 17 The Navy List (various dates)
- 18 Will of Rev James Browning 1825
- 19 Surgeon's Log of HMS Alligator 1828 (National Archives Ref ADM101/84/4)
- 20 Letter from Colin Arrott Browning to Hon Commissioners for Victualling 26th September 1828, (University of Nottingham Manuscripts & Special Collections Ref PWH630/1)
- 21 Letter from Miss Grant Arrott to Mrs Magdalen Browning Jul 1829 (held by family)
- 22 Surgeon's Log of HMCS Surry (ADM101)
- 23 'Who Was Who in British India' by John F Riddick (pub Greenwood Press 1998)
- 24 Surgeon's Log of HMCS Arab (ADM101)
- 25 National Index of Births, Marriages & Deaths
- 26 Surgeon's Log of HMCS Margaret
- 27 'Sir William Burnett (1779–1861), Professional Head of the Royal Naval Medical Department and Entrepreneur' by Christopher Penn (Journal of Medical Biography, August 2004)
- 28 'Lady Franklin' in 'Australian Dictionary of Biography' (Pub Australian National

University)

29 Surgeons' Log of HMCS Pastonjee Bomarjee

30 'Recollections of convict life in Norfolk Island and Victoria : with prison portraits, being sketches of criminals and prison governors, including the early life, career and death of John Price and the bushrangers, Billy Morgan, Burges &c' by Henry Garrett, alias Rouse, the bushranger (Pub Dunedin Public Library 1973)

31 Surgeon's Log of HMCS Hashemy

32 Record of Pensionable Service for Dr Colin Arrott Browning, Royal Navy (National Archives Ref ADM196/8)

33 Letter from Arrott Browning to Mrs Jean Browning Dec 1856 (held by family)

34 Will of Colin Arrott Browning 1856

35 Obituary of Arrott Browning 1877 (Institute of Civil Engineers)

36 Letters to Mrs Jean Browning from her emigrant sons in Ontario (held by family)

37 'Alumni Cantabrigienses' by John A Venn (pub Cambridge University Press 1940)

38 'Burke's Genealogical & Heraldic History of the Landed Gentry' by Sir Bernard Burke

39 'The Convict Ships 1787-1868' by Charles Bateson (pub Brown Son & Ferguson, Sydney 1984)

40 'Health, Medicine, and the Sea: Australian Voyages c.1815-1860' by Katherine Foxhall (pub Manchester University Press 2012)

41 Letter from Colin Arrott Browning to Mrs Jean Browning Dec 1848 (held by family)

42 'The Courier' (Hobart) Feb 2nd 1857

Acknowledgements

I wish to thank Mrs MC Eagle (Salisbury UK), Ms D Michell (Baltimore USA), Mr D Browning (Surrey UK), the late Mr JC Browning, Mr J Coady (British Columbia), Ms Jo-Anne Murphy (New South Wales), Mr D Montague (Northamptonshire UK), Mr R Miller (Louisiana USA), Mr G de la Mare (London), the late Mr JPR de la Mare, the late Rev BJH de la Mare, Prof J George (Open University, retired) & Mr S Kerr (RCS Edinburgh) for their information & assistance.

The photograph of Dr Browning's widow Eliza Browning nee Green (1800-1863) is used with permission from its owner, Ms Deborah Michell of Johns Hopkins University, Baltimore MD.

Declaration of interest

The author is Dr Colin Arrott Browning's great, great, great, grandson.

THE TWO HUNDRED AND FOURTH ORDINARY MEETING

The Two Hundred and Fourth Ordinary Meeting of the Society was held at the Royal College of Surgeons and Physicians in Glasgow on Saturday 19 March 2016. Three papers were presented, the first by Mrs Carol Parry and Dr Elaine

Morrison on the Girton and Newnham Unit of the Scottish Women's Hospitals in the First World War. The second paper was by Paula Blair on the Genetics of Pre-natal diagnosis and its Social Impact- the Case of Malcolm Ferguson-Smith and the final paper was by Maelle Duchemin-Pelletier on Stillbirth in Glasgow after the formation of the NHS.

SCOTTISH WOMEN'S HOSPITALS IN SERBIA AND SALONICA: THE GIRTON AND NEWNHAM UNIT.

The inspiration for our research on the Girton and Newnham Unit of the Scottish Women's Hospitals is a battered, brown-coloured and rather unprepossessing photograph album stored in the archives of the Royal College of Physicians and Surgeons of Glasgow. The album was compiled by Sister Annie Johnston Allan who went out with the Girton and Newnham Unit of the Scottish Women's Hospitals during the First World War to Serbia and then Salonica. We were immediately fascinated by the images, although small and somewhat faded, and wanted to find out more both about the compiler of the album and the history of the unit she joined. We have been immensely fortunate in having the main archive for the Scottish Women's Hospitals close at hand at the Mitchell Library, Glasgow. The story that both the images and our subsequent research has revealed is one of great endeavour, team work, comradeship, of pride in achievements and also of loss.

The Scottish Women's Hospitals for Foreign Service (SWH) was inaugurated just after the outbreak of the First World War in the autumn of 1914. The idea and inspiration behind the hospitals was that of Elsie Inglis, an Edinburgh obstetrician and gynaecologist, and a leading member of the Edinburgh National Society for Women's Suffrage, one of several suffrage societies united under the National Union of Women's Suffrage Societies (NUWSS). On the outbreak of war Dr Inglis offered to organize hospitals staffed by women. When the British government declined, units were offered to Allied governments and several, including France and Serbia, accepted the offer of help. In all there were 14 SWH units and virtually all, from the stretcher bearers to the commanding officers, were women. Money was raised by fund-raising; something that the suffrage societies were experienced in organising.

The women who joined the SWH had a great deal to prove. Although by 1914 about 10 per cent of medical graduates from Glasgow University were women, opportunities for progressing within hospitals were few and far between and almost always restricted to gynaecology and paediatrics. Trained nurses, too, sought recognition for their years of training and their increasing

professionalization. Throughout the war period the suffrage press contains articles relating to state registration of nurses; this being realised in 1919. The orderlies who joined up also needed to prove that they were 'doing their bit' for the war effort. Although the fight for the franchise for women had been abandoned at the outset of war in favour of supporting the war effort there was no doubt that, as stated by Dr Louise McIlroy, in February 1917:

“What I feel is, that, since the beginning of the war we were out for one definite point, and that was the position of women.”

A very short-lived but successful SWH unit was formed at Calais to work amongst Belgian refugees, followed by the opening of Royaumont, a medieval abbey 25 miles from Paris. In the spring of 1915 units were sent out to Serbia, one of these being under Dr Elsie Inglis. They worked in Serbia for some months until forced either to retreat over the mountains of Montenegro to Scutari or be taken prisoner and then subsequently repatriated.

In May 1915 the Girton and Newnham Unit (named after the Cambridge Colleges who had raised the money) was sent to Troyes in France. Troyes at that time was about 40 miles from the front line and was one of the principal stations for receiving wounded, with around twenty temporary hospitals, mostly in schools. The unit was unique in being under canvas (200 beds) and was assigned to the grounds of the nearby Chateau Chanteloup, just outside the city. Dr Louise McIlroy, the first woman to gain an MD from Glasgow University in 1900, was in charge of surgical beds and Dr Laura Sandeman from Aberdeen in charge of medical beds. They were described in a SWH publication of 1915 as “two of the most brilliant women doctors that Scotland has produced”. The hospital's administrator was Mrs Harley, the sister of Sir John French, commander of the British Expeditionary Force. Already in her sixties, she was a woman of great energy with a forceful personality. The establishment of the hospital was greatly helped by French soldiers who carted the hospital's equipment from the train station at Troyes, built a field kitchen, helped with electricity and in arranging sanitary matters etc. In all it took a month to get the hospital assembled and ready for use.

Patient accommodation was provided in a double row of marquee tents in the grounds of the chateau. The operating theatre was installed in the chateau's *orangerie* and the X-ray machine in a stable in the courtyard; the domain of Miss Edith Stoney, a Cambridge graduate and lecturer in physics at London University. The administrative centre of the hospital was on the ground floor of the chateau with staff accommodation on the upper floors, apart from some of the doctors and night staff who slept under tents away from the main

hospital.

In September 1915 the French War Office requested that the hospital should accompany the French Expeditionary Force to Salonica, one of the few instances where a voluntary hospital had been sent with an expeditionary force. It was at this stage that Annie Allan joined other new members of the Girton and Newnham Unit and set sail from Liverpool to Salonica; a trip made perilous by the danger of German submarines. There they were to join the Troyes members of the unit who had sailed from Marseilles.

By the time she joined the Scottish Women's Hospitals, Airdrie-born Sister Annie Allan was twenty-seven and an experienced nurse, having started her professional career at the Camelon Fever Hospital in Falkirk followed by the Elder Cottage Hospital in Govan. Elder Cottage Hospital had been founded in 1902 by Mrs Isabella Elder, the widow of wealthy shipyard owner John Elder. Mrs Elder had also been instrumental in the foundation of Queen Margaret College for women and in the Elder School of Medicine for women in Glasgow. Elder Cottage Hospital consisted of thirty beds in two wards named Florence Nightingale and Sophia Jex Blake. With Florence Nightingale representing the professionalization and training of nurses and Sophia Jex Blake, who had established in Edinburgh the first hospital in Scotland to be run by and for women, representing woman doctors, it is perhaps no surprise that nurse Annie Allan joined an all-women operation for her war service.

By the time that the Allied Expeditionary Force arrived in Serbia, most of the country had been overrun as a consequence of a treaty signed in September 1915 between Germany and Bulgaria. On arrival at Salonica the unit was instructed to proceed to Guevgueli, just across the border in Serbia, where the French were forming a large hospital centre.

Annie Allan would have felt amongst friends in the unit. Several of the nurses were from Glasgow and four of the five medical officers were Glasgow graduates. In addition to Chief Medical Officer Dr Louise McIlroy, Drs Honoria Keer and Mary Alexander graduated from Glasgow in 1910, Barbara McGregor in 1911. The bacteriologist, Dr Isabel Emslie, was an Edinburgh graduate. Dr Sandeman, the Chief Physician, left the unit at this stage and did not sail with the others.

Being part of the French Expeditionary Force, the unit found themselves in the position of being British women working for the French when the British division in Guevgueli lacked any hospital of their own. Unfortunately, the equipment had not met the unit as expected and there were no stoves or tents for the staff and not that many for the marquee-ward tents. Worst of all, the poles of the tents brought from France had been stolen at Salonica. French

engineers came to the rescue and produced tall trees as substitutes, but it was ten days wasted.

An empty unused silk factory was given to the unit and was used for staff accommodation. The building consisted of three very long open barns, one over the other, with access via central rickety, ladder like steps. The ground floor was full of machinery/furnaces except for two unlighted rooms which became the operating theatre and X-ray room. The first floor had been designed as a room for drying cocoons. The wire drying frames and baskets were cleared and bales of hospital equipment placed in their stead. The doctors and Mrs Harley slept in the passageways and the rest of the staff slept up ladders on the second floor apart from some who slept on the little wooden balcony running right round the building on the first floor. A pharmacy was established on the various landings up the ladders. By dusk on the first day in the silk factory, the radiographer Edith Stoney with the help of her assistant Mallet, (one of the very few male members of the unit), had established electric lighting in the factory and the open-air kitchen. Stoney had purchased a small engine in Paris before setting off for Salonica, which proved to be invaluable. The kitchen consisted of simple trench fires and the staff ate out of doors. The majority of the heavy work was done by the unit members themselves as no troops could be spared to help.

Once the tents were established the wounded began pouring in. The patients, all French soldiers and many of them Senegalese, suffered from severe head wounds and frostbite. At first the weather was very windy and wet, but it gradually got colder and colder and patients arrived with severe frostbite as well as very severe lung and head wounds. The room designated as the operating theatre in the silkworm factory was tiny and the patients had to be carried from their tents about 100 yards to reach it. The night nurses had to cross open ground between the ward tents and the night kitchen for hot drinks in blizzard conditions. Although stoves kept the tents warm, the silk factory was bitterly cold. Unit members slept in every bit of clothing they had and put their waterproofs under the mattress to stop the draught getting through. Many of the staff were badly equipped for the atrocious conditions and suffered very badly from the cold, only warming up by the middle of the day. The soups and stews prepared by the cooks in the outside kitchen became cold if left for a few moments.

By December the Allies were in full retreat from Serbia and, on the 2nd December 1915, the unit was told to make all preparations for evacuation. The hospital had been in working order for just a fortnight and had received in that time 94 patients. The patients were evacuated on crowded trains, not at all suitable for passengers, let alone stretcher cases. The staff of the unit and as

much of the equipment as possible was also taken back to Salonica by train. The silk factory was blown up shortly after the unit left by the evacuating French forces.

Dr Louise McIlroy's experience of the retreat was published in the suffrage paper the *Common Cause* of January 28th 1916:

"I never realised the horrors of war until I got to the front. Those villages becoming evacuated daily as the enemy got nearer, the roads full of droves of refugees with their donkeys laden with their household goods The doors of the churches were open, and beautiful carved wood and vestments just left for the Bulgars. I have never seen anything so sad, and shall never forget it..."

Mrs Harley and Dr Keer had left Guevgueli a few days before the rest of the unit to find a site for the unit at Salonica. At this stage Salonica was full to overflowing with retreating armies and refugees and the only place they could find was a piece of swampy waste ground by the sea. It was later drained but in the early days of its establishment members of the unit often had to wade through 7 to 8 inches of mud and water. Individual ridge tents had arrived by this time, which were used by the staff so that living conditions were much improved from Guevgueli. Help was given in putting up the tents by sailors from HMS Exmouth, and one of the hospital tents was subsequently named "The Exmouth" in recognition of the help received. On New Year's Day 1916, the staff gave an "At Home" to form an official opening. Many British and French officers attended and a Scottish regiment sent their band. Such was the success of the hospital that by May 1916 the hospital was considered to be one of the "show hospitals" in Salonica.

The patients treated at the hospital were Serbian and French soldiers. In February 1916 a British Tommy was brought in with a bullet in his brain, the result of an accident. The authorities allowed the unit to keep him and Dr McIlroy removed the bullet and the soldier made a good recovery. This was an important moment for the hospital as the unit had not been allowed previously to treat British soldiers. Dr McIlroy wrote back to the organising committee in Edinburgh that: "I think our hospital got a good deal of credit over the case, as there would have been serious complication if this man had died."

Whereas cold had been one of the main enemies in Geuvgueli, heat proved to be one of the biggest problems in Salonica. From the middle of April, it became very hot and flies were a constant scourge resulting in dysentery. Worse still, however, was the mosquito. Before the war Salonica had been free from malaria and although the Anopheles mosquito was present it was uninfected. However, with the great movement in troops and with soldiers infected with malaria coming to Salonica, the whole area became infected.

Suitable mosquito nets for the Allied soldiers at the Front did not arrive until the summer was over and, as a consequence, long convoys of ambulances brought cases of dysentery and malaria.

Just as the unit had been too scantily clad for the cold of the winter, so they were now unprepared for the intense heat of the summer, said to have been the hottest in that part of the world for twenty years. The nurses exchanged their stiff uniforms for thin white overalls, which proved to be far more practical. Those patients delirious from malaria required an enormous amount of nursing, and there was not nearly enough ice to go round. The patients suffered dreadfully from the heat and thirst and occasionally some, half delirious, ran into the sea. Even the sea, though, was warm. Patients continued to stream in and the unit was enlarged to 340 beds when there was only staff for 260. The unit had access to a little flat in a hill village, but only the very tired staff were allowed to rest there for a while. Dr Louise McIlroy reported back to Edinburgh that "Our staff have done so well but many are dropping from the heat".

Under these conditions it was not surprising that the unit staff, too, were affected by malaria, dysentery and other illnesses. Sister Burt, who had left Liverpool with Annie Allan, was an early casualty. She died in April 1916 from a "long and trying illness" and was given a full military funeral and buried in the Anglo-French cemetery in Salonica.

Despite the hard work there was also 'down time' and there are several pictures in the photograph album of tea parties both at the hospital and on also on board one of the many naval vessels in the harbour.

In August 1916 Annie Allan sailed back to the UK having completed nearly a year away under the most strenuous and exhausting conditions. She continued her war work by becoming matron of Caldergrove Auxiliary Hospital, Hallside, Cambuslang, which was opened in October 1916 and staffed by Hamilton VAD. On its closure in 1919 she became Matron of Kirkcudbright Cottage Hospital. In 1930 at the annual subscribers' meeting of Kirkcudbright Cottage Hospital she was given the following praise:

"The Matron, in spite of her ever-increasing duties, continues to conduct the hospital in a most satisfactory manner and the committee realise that the increase in subscriptions and donations is a tribute to her efficiency and courtesy."

In 1933 Annie Allan resigned her post on marriage; for her, in accordance with most women of her time, her paid working life was over. Her successor at Kirkcudbright Cottage Hospital, Miss Marion McNeill, subsequently donated Annie Allan's photograph album to the Royal College of Physicians and Surgeons of Glasgow.

The Girton and Newnham Unit continued in Salonica, moving during the winter of 1917/1918 to a larger and better site. This was the opportunity for CMO Dr Louise McIlroy to realise her vision of an orthopaedic centre and dental facilities. In 1919 the unit moved to Belgrade with the object of establishing a memorial hospital to Dr Elsie Inglis. However, conditions were chaotic in Serbia after the First World War and the attempt had to be abandoned.

Although trained nurses gained professional acknowledgment with the creation of the state Register for Nurses after the war, women doctors still found many doors closed to them. Many of the teaching hospitals had opened their doors to women during the war only to slam them shut again when it was over. Some women doctors worked abroad, such as Mary Alexander (India) and Honoria Keer (Africa). Pioneering Louise McIlroy, the inspirational CMO of the Girton and Newnham Unit, had arguably the most glittering career after the war. She became the first woman professor of obstetrics and gynaecology at the Royal Free Hospital in London and in 1929 was made a dame for her services to midwifery. The demand of the suffragists for the vote was partially achieved in 1918 when women over thirty were allowed to vote; equal suffrage with men being achieved in 1928.

STILLBIRTH IN GLASGOW AFTER THE FORMATION OF THE NATIONAL HEALTH SERVICE

This paper looks at stillbirths in Glasgow after the formation of the NHS. I will start by explaining briefly the NHS system when it was first established and how the system applied to Glasgow. I will then look at the evolution of Scottish stillbirth before the establishment of the NHS and its trend in the following decades, as well as the stillbirth-rate in Glasgow and more particularly for the Glasgow Royal Maternity and Women's Hospital and the Queen Mother's Hospital. As I will highlight later, the decades following the creation of the NHS are characterised by the use of technology to picture the inside of the womb and thus diagnose abnormalities and conditions and prevent fatal outcomes, therefore intensifying the medicalisation and hospitalisation of childbirth.

In 1947 the National Health Service (Scotland) Act was passed, thus creating the National Health Service in Scotland from 5 July 1948. The NHS as a whole was established on a tripartite system, health being provided through three distinct groups: hospital services, primary care and community

health services.¹ In regards to obstetrics, and especially antenatal supervision, the maternity service was divided between general practitioners, hospital antenatal clinics and maternity wards, and local health antenatal clinics and services provided by community midwives. In Glasgow, local health maternity services were provided by Glasgow Corporation Domiciliary Midwifery, ‘lovingly referred to by the Glasgow people as “green ladies” because of their green uniforms.’² Until January 1964, even if other hospitals provided maternity services, the main maternity hospital in Glasgow remained the Glasgow Royal Maternity and Women’s Hospital, also known as Rottenrow. From 1964, both the Glasgow Royal Maternity Hospital and the Queen Mother’s Hospital were the two most important maternity hospitals in Glasgow and the West of Scotland.

In 1939, stillbirths were for the first time registered in Scotland, and it became possible to follow the stillbirth-rate. For that first year, the Scottish stillbirth rate was 42.2 per 1,000 total births.³ In 1949, ‘the Scottish stillbirth rate was 27 [per 1,000 total births], [that was] a fall of 36 per cent in ten years.’⁴ This consequent fall happened during the Second World War and incidentally, as Professor Dugald Baird also highlighted, ‘The more interesting fact is that the fall in the stillbirth rate was steepest in the years 1943 and 1944 at a time when staffs were depleted and so much energy was being expended in winning the war’, which seemed paradoxical.⁵ We can understand why the medical profession believed the rate would continue to drop rapidly, with the establishment of the NHS offering free medical care for all pregnant women throughout their pregnancies, as well as a continued improvement of the standards of health and nutrition. In the 1950s, however, the stillbirth rate in Scotland did not decrease as steeply as imagined. Indeed, in 1950 and 1951, the Scottish stillbirth rate remained at 27 per 1,000 total births. It fell to 20.8 in 1963, which was the lowest rate ever recorded in Scotland. Between 1950 and 1963, the Scottish stillbirth rate reduction was not even half the reduction that occurred in the previous decade.

The stillbirth rate of the Glasgow Royal Maternity Hospital diminished following the establishment of the NHS but had always remained higher than the Scottish stillbirth rate, as Figure 1 shows. Before the NHS, the reports had always explained the Hospital’s unusually high stillbirth rates because of

¹ Geoffrey Rivett, ‘1948-1957’, *National Health Service History*, <<http://www.nhshistory.net/shorthistory.htm>>, [accessed 26 February 2016].

² Helena Joyce, *The Green Lady, Memoirs of a Glasgow Midwife* (Ladysmith, B.C.: Circle 49 Publications Association, 2009), p. v.

³ Lothian Health Service Archive, *Annual Reports of the Registrar-General for Scotland, 1939-44*, LBH16/6/34.

⁴ Dugald Baird, ‘The future of obstetrics’, *Edinburgh Medical Journal*, 60 (1953), obst p. 19.

⁵ *Ibid.*

‘[t]he high incidence of abnormal cases [which] is explained partly by the fact that the Hospital serves a large industrial area where the incidence of rickets and malnutrition and overcrowding is high, and partly by the fact that abnormal cases only are admitted from some of the outlying areas.’⁶ In the 1950s, the reports emphasised that ‘[t]he Hospital continues to admit a high proportion of abnormal cases, though those have diminished slightly over the past few years owing to the expansion of the obstetrical services, both in the city & the outlying areas.’⁷ This can explain in part the decrease in the stillbirth rate of the Hospital in the early 1950s. In 1956, in Paisley but linked to Rottenrow, ‘[t]he Ross hospital was opened ... to meet the need for more beds for those booked mainly for social reasons: it provides a modern well-equipped hospital of 73 beds and in 1960 over 2,000 deliveries took place there with the loss of only 18 babies.’⁸ In the report for the year 1960, the author emphasised that

‘Since 1951 the perinatal mortality rate of the hospital service has declined from 95.25 per 1,000 to 53.3 per 1,000 total births. This is a satisfactory improvement, but may be due in part to the increased number of obstetrically normal patients now delivered in hospital for social reasons. In the city of Glasgow, however ... the incidence of complicated pregnancy in the Royal Maternity Hospital remains very high.’⁹

Therefore, the fall in the stillbirth rate was due more to the incorporation of the Ross Hospital’s low stillbirth rate than to a real diminution of the Hospital’s stillbirth rate. Indeed, for the 1960s, the stillbirth rate in the Glasgow Royal Maternity Hospital only was 49.1 per 1,000 total births compared to 34.2 for the combined rate.¹⁰ In the 1950s and 1960s the Glasgow Royal Maternity Hospital continued to have a high stillbirth rate, much higher than the national rate due to its uncommonly high concentration of abnormal cases. Indeed, as Malcolm Nicolson underlines, in the 1950s ‘Rottenrow was desperately over-crowded. So much so that it turned away as many cases as it could. If a pregnant woman appeared to be healthy and no complications were foreseen, she was expected to deliver at

⁶ NHS Greater Glasgow and Clyde Archive, *The Glasgow Royal Maternity & Women’s Hospital, Medical Report for the Year 1947*, HB45/3/34(i), p. 6.

⁷ NHSGGCA, *The Glasgow Royal Maternity & Women’s Hospital, Medical Report for the Year 1951*, HB45/3/38(ii), p. 5.

⁸ NHSGGCA, *The Glasgow Royal Maternity Hospital & the Ross Hospital, Clinical Report 1960*, HB45/3/40(i), p. 7.

⁹ *Ibid.*

¹⁰ NHSGGCA, *The Glasgow Royal Maternity Hospital & the Ross Hospital, Clinical Report 1960*, HB45/3/40(i), p. 9.

home', if her home was suitable.¹¹ The hospital, therefore, welcomed mainly abnormal cases due to the ratio between its bed capacity and the number of booked cases.

'The Queen Mother's Hospital was established to meet the need for additional maternity beds in Glasgow and to provide a properly equipped academic department of obstetrics for undergraduate & postgraduate teaching & for research.'¹² The stillbirth rate of the Queen Mother's Hospital was 17.4 per 1,000 total births in 1964-1965 and 16.9 in 1966-1967.¹³ During those four years, the Queen Mother's Hospital rates were much lower than the stillbirth rates for Rottenrow and the Ross Hospital; this might be explained by the difference of population admitted in the hospitals. Rottenrow was based in the East End of Glasgow where the population in general was poorer than other parts of the city. Nicolson highlights that in the 1950s, but it was still the case in the 1960s, 'even more strongly than today, poverty was associated with poor nutrition, multiparity, and the uneven take-up of antenatal care', which were causes already known to increase the risk of stillbirth.¹⁴

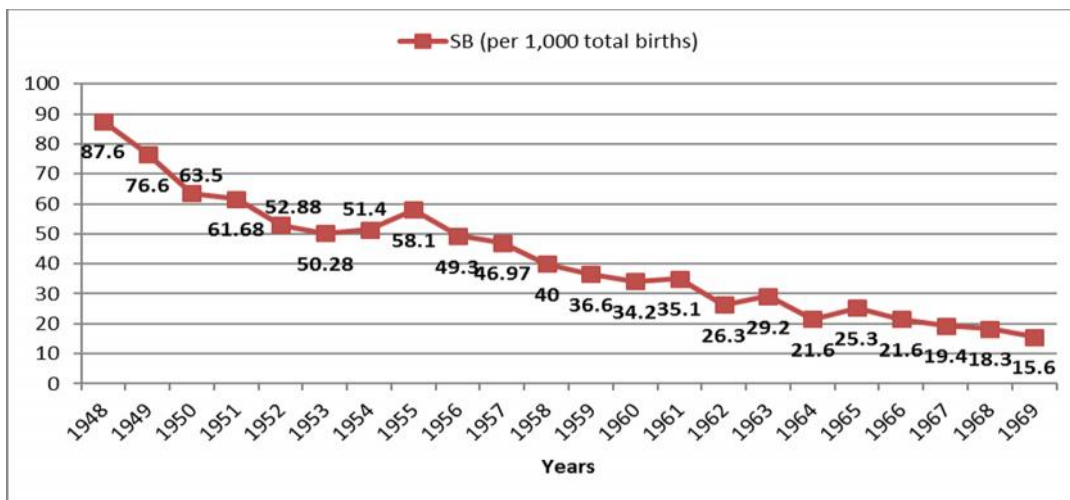


Figure 1: Stillbirth rate, Rottenrow, 1948-1969¹⁵

¹¹ Malcolm Nicolson, 'The Queen Mother's Hospital, 1964-2010', in *Child Health in Scotland, A History of Glasgow's Royal Hospital for Sick Children*, Iain Hutchison, Malcolm Nicolson, Lawrence Weaver (Eds) (Edinburgh: Scottish History Press, 2016), p. 191.

¹² NHSGGCA, *The Queen Mother's Hospital Glasgow Clinical Report for 1964-65*, QMH/2/1/1(i), p. 6.

¹³ NHSGGCA, *The Queen Mother's Hospital Glasgow Clinical Report for 1964-67*, QMH/2/1/1(i)-2.

¹⁴ Nicolson, 'The Queen Mother's Hospital', p. 191.

¹⁵ NHSGGCA, *The Glasgow Royal Maternity & Women's Hospital, Medical Report for the Years 1948 to 1952*, HB45/3/35(i)-39(i); NHSGGCA, *The Glasgow Royal Maternity Hospital & the Ross Hospital, Clinical Reports 1960-1969*, HB45/3/40(i)-43.

In the 1920s, X-ray imaging had begun to be used to diagnose placenta praevia, the technique was called placentography. In the 1940s and 1950s, obstetricians in partnership with radiologists kept on developing X-ray diagnosis. In the meeting of the Glasgow Obstetrical and Gynaecological Society on 15 December 1954, Dr Crawford, consultant radiologist, reported on the improvement that had been made in soft tissue radiology for 20 years in favourable cases. A discussion around x-ray diagnosis followed his presentation. Indeed, Dr Arthur Sutherland, obstetrician in Glasgow, highlighted that X-ray diagnosis in suspected cases of antepartum haemorrhage, especially placenta praevia, allowed the identification of some of those cases which did not require hospital treatment and therefore could be sent home. X-ray diagnosis of antepartum haemorrhage cases, thus, helped the hospital to save money, time and space for patients in real need of hospital treatments, according to obstetricians and radiologists of the time. Finally, he revealed to the meeting his stillbirth and neonatal rate in antepartum haemorrhage, which was 16.6 per cent.¹⁶ This percentage is quite low compared to Glaswegian obstetrician Dr Robert Tennent's average stillbirth and neonatal rate in placenta praevia cases from 1941 to 1946, which was 34.1 per cent.¹⁷ Sutherland's rate was less than half Tennent's rate, and therefore it would seem that placentography helped to decrease the incidence of stillbirths and neonatal deaths in favourable cases of placenta praevia, by providing a better diagnosis. Indeed, in the meeting of the Glasgow Obstetrical and Gynaecological Society on 13 June 1956, Sutherland emphasised that '[t]he use of soft tissue X-rays permitted a definite diagnosis, allowed the patient to get home where the placenta was not praevia and encouraged Caesarean section without prior vaginal examination.'¹⁸ Dr Crawford added that if only one film was taken around the 32nd week of pregnancy, 'there was little danger to the foetus.'¹⁹ In 1951, however, Dr Alice Stewart and her co-workers in Oxford demonstrated the harmful effect of X-rays on children who had been X-rayed while still fetuses.²⁰ Indeed, she found that in Britain 'about six per

¹⁶ RCPSG Archive, *Glasgow Obstetrical and Gynaecological Society, Committee Minutes 1947-1962*, RCPSG 14/1/3.

¹⁷ Robert A. Tennent, 'Treatment of placenta praevia: the foetal aspect', *Edinburgh Medical Journal*, 54 (1947), p. 510.

¹⁸ RCPSG Archive, *Glasgow Obstetrical and Gynaecological Society, Committee Minutes 1947-1962*, RCPSG 14/1/3.

¹⁹ *Ibid.*

²⁰ M. Nicolson, J.E.E. Fleming, *Imaging and Imagining the Fetus: the Development of Obstetric Ultrasound* (Baltimore: John Hopkins University Press, 2013), pp. 14-100; Ann Oakley, *the Captured Womb, A History of the Medical Care of Pregnant Women* (Oxford: Blackwell, 1984), p. 105, pp. 156-58.

cent of children who [had] died of malignant disease during 1953-55 had been X-rayed in utero.’²¹ That was one of the reasons why Professor Ian Donald and his colleagues’ work on obstetric ultrasound in Glasgow from the 1950s onwards appeared as the perfect alternative solution to monitor the foetus during the antenatal period. Furthermore, ultrasound was not only safer but more accurate than X-ray imaging. In the mid-1950s onwards, Donald’s team made many improvements to their machine, and ultrasound was used quite frequently in Rottenrow and later on in the Queen Mother’s Hospital which was the first hospital in Britain to have an ultrasonic department. Regarding diagnosis of antepartum haemorrhage by obstetric ultrasound, however, in the Symposium on Medical Applications of Ultrasound, held in London on 14 November 1963, Ian Donald explained that he had not

‘yet explored the possibilities of placental localisation in cases of antepartum haemorrhage because of the fact that [his] major ultrasonic apparatus [was] situated in [the Western Infirmary which was] at the other side of the town from [his] maternity unit and it would not [have] be[en] safe to transport bleeding pregnant women about the city in ambulances.’²²

Indeed, it was not before the mid-1960s that Donald and his team realised they had been imaging the placenta with their devices for quite some time without knowing it, and therefore stopped relying so much on X-ray placentography in Rottenrow and the Queen Mother’s Hospital.

Furthermore, obstetric ultrasound had allowed Donald and his colleagues to supervise foetal growth and diagnose early any abnormal foetal growth by measuring the foetal head diameter. Indeed, Donald underlined that in Rottenrow in the late 1950s – early 1960s a large percentage of macerated fetuses were found with foetal abnormalities such as anencephaly and hydrocephalus, concealed accidental haemorrhage (also called abruptio placentae), toxaeemias of pregnancy and unexplained causes. The issue was that ‘[i]n Dublin and in the West of Scotland, with their dismal climates, anencephaly, hydrocephalus and spina bifida [were] many times more common than they [were] in the more favoured East or in Japan.’²³ Donald then highlighted that a bad placenta did not provide a foetus

²¹ [Anon], ‘Environmental hazards of pregnancy’, *Lancet*, 274 (1959), p. 97.

²² NHSGGCA, *Papers of Prof Ian Donald (1910-1987)*, British physician, *Symposium on medical applications of Ultrasound*, London, 14/11/1963, HB110/2/3, p. 2.

²³ NHSGGCA, *Papers of Prof Ian Donald (1910-1987)*, British physician, ‘Antenatal Foetal Hazard’ Reprinted from supplement No 1 to Vol XIII (No 60) of the *Journal of the College of General Practitioners*, HB110/2/3, p. 43.

with enough oxygen nor also enough nutriment, and thus it stopped the foetus from growing normally. Donald explained that he had

‘investigated the problem by measuring the growth with [his] ultrasonic echo-sounding technique. [They] need[ed] pretty accurate measurements to know the rate at which it [was] growing and so [they] measure[d] the width of the baby’s head, or the biparietal diameter, as being the most concrete and constantly available diameter for measurement ... [They could] now measure the width of the head in centimetres to two places of decimals.’²⁴

To conclude, in the 1950s onwards, while various obstetric technologies were developed and used in Glasgow, obstetric ultrasound soon took over x-ray diagnosis in the city, but it would not spread throughout Britain before the 1970s, and until then antenatal x-ray diagnosis remained a widely used technology.

‘In Britain to-day most women have children because they want them and not because they cannot prevent them. [...] The diminishing size of the family means that the individual baby has become more important. Parents are less willing to accept as unavoidable the loss of a first baby from birth injury... This changed attitude is reflected in the work of maternity hospitals. [...] Nowadays Caesarean sections are being performed for the sake of the baby alone; for example, where there has been a previous stillbirth or where signs of foetal distress develop.’²⁵

In this quotation from Dugald Baird in 1953, we see that under the NHS the medical profession and also society in general did not accept the death of a viable foetus any longer without a valid reason and thus stillbirths were to be prevented if all possible. As Nicolson highlights, ‘concern for the life of the newborn led to a more intense focus on the life, and death, of the foetus.’²⁶ In order to prevent preventable stillbirths, and, strengthened by the continual increase of the use of obstetric technologies, obstetricians turned their gaze towards raising the percentage of hospitalisation in childbirth to diminish the stillbirth rate. As explained earlier, the NHS was based on a tripartite system. Susan Storrier highlights that ‘[a]fter the implementation of the NHS [in Scotland] there was a gradual increase in the uptake of antenatal care performed by GP in their surgeries, and, in time, by obstetricians in hospital antenatal clinics.’²⁷ This shift happened gradually, with several milestones.

²⁴ Ibid., p. 45.

²⁵ Baird, ‘The future of obstetrics’, *Edinburgh Medical Journal*, 60 (1953), obst. p. 20.

²⁶ Malcolm Nicolson, ‘Death and Birth’, In *A Cultural History of the Human Body*, eds. Crozier, I. and Beccalossi, C. (Berg Publishing: Oxford, 2010), p. 40

²⁷ Susan Storrier, *Scotland’s Domestic Life* (Edinburgh: John Donald in association with the European Ethnological Research Centre and the National Museums of Scotland, 2006), p. 444.

Firstly, obstetricians complained of the quality of antenatal care provided by GPs. Indeed, in an article published in the *Lancet* in 1955 on ‘Maternity and child welfare in Glasgow’, Dr Stuart Laidlaw, Medical Officer of Health for Glasgow, was worried that in 1953 once again the stillbirth and neonatal mortality rate had not decreased when some were preventable thanks to both better obstetric care and better education of the expectant women. The article emphasised that Laidlaw regretted

‘that attendances at antenatal clinics once again [had fallen]. Every effort [had been] made to secure the co-operation of the GPs in advising expectant mothers to attend mothercraft classes and special consultant sessions at the clinics, but the response [had been] very poor. Thus, of 2,479 expectant mothers who attended these sessions, only 150 were referred by their family doctors.’²⁸

In 1963, criticism against antenatal care provided by GPs remained, not only in Glasgow but throughout Britain. Indeed an article stressed that the ‘antenatal care which [was] so important to prevent foetal loss [was] not as high in standard when under sole care of GP when compared to the care provided in hospital antenatal clinics’ as some tests were not performed in GP surgeries such as blood-pressure measurement.²⁹ Later on the article, it was claimed that both antenatal supervision and delivery in hospital provided the best care as, despite a high percentage of abnormal cases in hospitals, the perinatal mortality rate in hospitals was around the national rate. The article concluded that

‘[i]f prenatal mortality and morbidity [were] to be reduced the maternity service must be based on properly equipped and staffed hospitals where obstetricians, GPs, and midwives work in close harmony. There [was] no place for isolated or detached units. These facts should be placed clearly and repeatedly before the public, and every effort made to enlighten women (particularly those in “high-risk” categories) about the need for medical care in pregnancy. Good antenatal care and safe delivery in a hospital fully equipped and staffed to deal with any emergency [could] prevent family tragedies once thought to be unavoidable.’³⁰

In the 1960s, obstetricians began to write articles in medical journals to demonstrate that childbirth was safe only in hospitals. In Glasgow, in 1959, the percentage of pregnant women delivered in hospitals was 60 per cent. Despite being more than half of the deliveries, Dr Horne, Medical Officer of Health for Glasgow, ‘expresse[d] disappointment that no progress [had been]

²⁸ [Anon], ‘Maternity and child welfare in Glasgow’, *Lancet*, 265 (1955), p. 206.

²⁹ [Anon], ‘Perinatal mortality’, *Lancet*, 282 (1963), p. 1207.

³⁰ *Ibid.*, p. 1208.

made during the year towards increasing this proportion, which, he [said], should [have not been] less than 75 per cent, in order to secure the admission of all women who should [have] be[en] confined in hospital either for medical or for social reason.’³¹ According to Horne, it was a necessity because the perinatal mortality rate in Glasgow was 45.5 per 1,000 total births which was the highest rate in all of Britain, and thus something had to be done to reduce that rate and hospital delivery was the obvious solution. The following year, the Glasgow Royal Maternity Hospital closed its Domiciliary Midwifery Service, home confinement was no longer offered by the largest maternity hospital in Glasgow, emphasising the Department of Health for Scotland’s willingness to bring women in hospitals for childbirth.³² Therefore, in Glasgow in the 1960s, only the Green Ladies provided booked home confinements. Despite the willingness to increase hospital deliveries, Helena Joyce explains that many Glaswegian women in the 1960s,

‘whose pregnancy condition warranted a hospital confinement, called the midwife at the last minute to avoid going into hospital. The reasons for doing this were varied. Mainly they did not want to be away from their home turf as they were the glue that held the family together and they held the strings of the family purse; also they received a Government home confinement grant if their baby was delivered at home!’³³

To conclude, the slow decrease of the stillbirth rate and the increasing use of obstetric technologies in Glasgow, but also elsewhere in Britain, pushed obstetricians and the medical officers of health to promote hospital or local health antenatal supervision and hospital deliveries. Even if the medical profession wished for at least 75 per cent of women to deliver in hospitals, some women resisted this push and found ways to remain home to deliver. The following decades saw the obstetricians’ long held wish for increased hospital deliveries realized, with ‘a peak in 1981 with 99.5 per cent of Scottish babies being born in hospital.’³⁴

³¹ [Anon], ‘Maternity services in Glasgow’, *Lancet*, 276 (1960), p. 1151.

³² Derek Dow, *The Rottenrow, The History of the Glasgow Royal Maternity Hospital, 1834-1984* (Lancaster: The Parthenon Press, 1984), p. 155.

³³ Joyce, *The Green Lady*, p. 28.

³⁴ Storrier, *Scotland’s Domestic Life*, p. 441.

THE GENETICS OF PRENATAL DIAGNOSIS, C1950-C1990: THE CASE OF MALCOLM FERGUSON-SMITH

It has only been in the past few decades that prenatal testing has become routine and that the mysteries of foetal development have begun to be unravelled. For the majority of women antenatal care has formed a central component of their pregnancy in recent years and is an accepted medical development. From ultrasound to visualise the foetus, to prenatal screening programmes for conditions such as Down's syndrome, the concept of the foetus as a medically accessible entity has become entrenched in our current health system. Work in the medical genetics field at the University of Glasgow was led by Professor Malcolm Ferguson-Smith, who is widely regarded as one of the most eminent British medical geneticists of recent decades. Ferguson-Smith and his colleagues played a major part in the development and use of diagnostic testing techniques, including helping to establish prenatal screening for neural tube defects. Ferguson-Smith was also the founder of the Duncan Guthrie Institute in Glasgow, one of the first specialised diagnostic and genetic counselling services in the UK. Despite Ferguson-Smith's contributions, remarkably little scholarly work has been undertaken to analyse the impact he had on this field. This paper aims to examine the scientific developments which have led to the integration of prenatal diagnostics into routine clinical care, and analyse the advances in prenatal testing at a local level. Doing so will highlight the contribution of Ferguson-Smith and his colleagues to this field. Combining these study areas will provide an analysis of the history of prenatal testing over the last few decades, both as a scientific subject and as a local clinical service.

It is important to begin by considering two of the main advances in prenatal testing, the use of amniocentesis and ultrasound. Described as the 'mainstay of prenatal diagnosis',¹ amniocentesis is an invasive diagnostic technique which uses amniotic fluid to test for a variety of conditions in the foetus during pregnancy, including chromosome disorders and neural tube defects.² The use of amniocentesis as a diagnostic tool during pregnancy was first described by Bevis in 1952. He studied amniotic fluid to assess the possibility of predicting the severity of haemolytic disease in foetuses of a Rhesus negative mother sensitised to the Rhesus antigen of the foetus.³ Bevis used the amniotic fluid to measure the concentrations of iron and urobilinogen, and showed that the results 'offer a reliable guide to the outcome for the foetus'.⁴ Thus analysis of amniotic fluid could allow for the prediction of the effects of a medical condition on a foetus before it was born. Amniocentesis was advanced in 1956 when Fuchs and Riis showed that it could be used for fetal sexing. They

collected amniotic fluid in the middle of pregnancy or at term, and found that the sex of the foetus could be identified by the presence or absence of sex chromatin in cell nuclei.⁵ In the same year Steele and Breg showed that cells taken from human amniotic fluid were not only viable, but could be grown in culture and karyotyped.⁶ Prenatal research was furthered by Brock and Sutcliffe in 1972, when they proposed the use of the molecule α -fetoprotein as a marker for foetuses with anencephaly and spina bifida. They found that levels of α -fetoprotein were much higher in pregnancies affected by these conditions and suggested that measuring α -fetoprotein would be 'valuable in the early antenatal diagnosis of anencephaly and spina bifida and will enable termination of these pregnancies'.⁷ Thus with amniocentesis it was becoming possible to detect both chromosome disorders and neural tube defects in the foetus prior to birth.

The advances made in amniocentesis were greatly aided by the technological innovation of ultrasound scanning. Pioneered in Glasgow by Ian Donald and Tom Brown, the use of an ultrasound scanner made it possible for the first time to visualise the foetus, allowing analysis of physical abnormalities. The first case of prenatal diagnosis by ultrasound which was identified early enough to enable medical intervention is attributed to Stuart Campbell and colleagues. In 1972 they correctly diagnosed an anencephalic pregnancy at 17 weeks gestation which led to an elective termination of the pregnancy.⁸ In addition to providing direct diagnoses, ultrasound was also beginning to improve the safety of amniocentesis. In 1972 Bang and Northeved in Copenhagen published a paper describing ultrasound-guided amniocentesis⁹ which enabled practitioners to visualise the insertion of the needle in real time to minimise injury risk to the placenta. This increased safety was reported by Harrison et al in 1972 who showed that the incidence of foeto-maternal transfusion, which is caused by damage to the placenta, was halved when using ultrasound-guided amniocentesis.¹⁰

With the development of amniocentesis and ultrasound, the potential for prenatal testing to impact antenatal care was becoming clear. To consider the developments which were occurring in this field in the geographical region of the West of Scotland, the case study of Professor Ferguson-Smith will be used. Born in Glasgow in September 1931, Ferguson-Smith graduated from the University of Glasgow in 1955,¹¹ and his first role was in the Department of Pathology at the Western Infirmary in the city. Whilst he was based in Pathology he became involved in a project with the esteemed pathologist Bernard Lennox. Lennox was interested in studying Klinefelter's syndrome, a chromosomal disorder which affects male physical and cognitive development, and which we now know is due to the presence of an extra X

chromosome. At that time it was proposed that Klinefelter's was a sex chromosome anomaly disorder in which males had 'female' nuclear sex, so Lennox suggested that Ferguson-Smith should look for sex chromatin, which is present in females but not in males, in males with undescended testes using the buccal smear technique.¹² Despite studying 115 males, no cases of Klinefelter's were found.¹³ As Ferguson-Smith was aware that males with Klinefelter's were infertile, he began screening patients at the infertility clinic in the hospital for the condition,¹⁴ and it quickly became clear that a large proportion of the patients presenting at the clinic had Klinefelter's. 10 of the 91 samples he had obtained were chromatin-positive Klinefelter's, which suggested that this condition was responsible for infertility in roughly 11% of males seeking fertility treatment.¹⁵ After studying the testicular biopsy of one of the patients, Ferguson-Smith could see spermatocytes, within which there were quite clearly Y chromosomes.¹⁶ As it was thought that Klinefelter's patients were sex-reversed females they would not have been expected to have Y chromosomes, so this finding convinced Ferguson-Smith of the need to study these chromosomes in greater detail to gain a better understanding of the condition.

Whilst these findings were of interest, the Department of Genetics at the University of Glasgow was not involved in human chromosome research at that time. To enable Ferguson-Smith to continue with the chromosome analysis he was put in touch with Victor McCusick of Johns Hopkins University in the United States, who was setting up a medical genetics laboratory. Arrangements were made for Ferguson-Smith to join McCusick in February 1959 to work on developing the bone marrow preparation technique to enable analysis of the chromosomes in Klinefelter's.¹⁷ Despite intending to only stay for one year at Johns Hopkins, by October of 1959 Ferguson-Smith had been offered an extension of his contract to continue with his chromosome research.¹⁸ With his work progressing and the laboratory facilities and staff numbers growing, he accepted this offer. He remained at Hopkins until October of 1961, and by the time he left to return to Glasgow as a Lecturer in Medical Genetics, the laboratory he was part of had become the first diagnostic laboratory of its kind in the United States, receiving patient samples for chromosome analysis from several states.¹⁹

With the appointment of Ferguson-Smith as Lecturer in 1961, the first medical genetics unit was informally established in Glasgow in the form of a small human cytology research department, comprising one room within the university.²⁰ The human cytology department was focused on research and teaching only, and had no responsibility for providing diagnostic services, an arrangement Ferguson-Smith felt was 'decidedly unfavourable to the clinical

and more strictly genetic aspects of human cytogenetic research'.²¹ Ferguson-Smith worked for several years to establish a chromosome diagnostic service, which was achieved in 1965.²² Over the following years work progressed on developing prenatal services, and between 1969 and 1973 134 cases were referred to the Glasgow and West of Scotland Genetic Counselling Service for chromosome analysis, which was achieved in 90% of these cases.²³ By 1975, 353 pregnant women had been tested who were at risk of chromosomal abnormalities, in addition to 363 women who were tested to exclude a chromosomal disorder, despite their initial referral to the genetic counsellor being for a non-chromosomal risk factor.²⁴ One of the main reasons for referral for chromosome analysis was pregnancies with a maternal age of over 40, as a number of chromosome disorders in the foetus become more frequent with advanced maternal age. 121 women underwent amniocentesis as they were over 40 years of age, and 8 of these pregnancies were diagnosed with chromosomal abnormalities, giving an abnormality rate of 6.6%. When compared to the finding that only 1 of 72 cases tested in women age 35-39 had an abnormality (rate of 1.4%), it is clear to see that this work supported the findings that Down's syndrome increases in pregnancies with advanced maternal age.²⁵ Of the 363 women offered amniocentesis for reasons other than a potential chromosomal disorder, two cases of chromosome aberration were diagnosed.²⁶ All 11 of these diagnoses of chromosomal disorders led to termination of the pregnancy, with the anomalies subsequently confirmed.²⁷ Ferguson-Smith continued to research the effect of maternal age for a number of years, and one of his key contributions to the field was a study with John Yates of 52,965 amniocenteses from across Europe to test the impact of maternal age. The data from this study was found to support the hypothesis that trisomy 21 increased in frequency in the pregnancy of older mothers, but interestingly it showed that the condition rose 'exponentially from age 35'.²⁸ The research also showed that the rise in cases of trisomy 21 was not sustained past the age of 46 years; Ferguson-Smith and Yates hypothesised that this was due to the inability of older mothers to maintain a chromosomally abnormal foetus in utero, which would result in an increased miscarriage rate prior to amniocentesis.²⁹ In trisomy 18 the rates rose exponentially up to age 43, and in trisomy 13 up to age 42, but then declined in both;³⁰ it was hypothesised that the levelling off rates were lower for both of these conditions than for trisomy 21 due to their lower viability, which resulted in greater difficulty in maintaining the foetus in an older mother.³¹ Another key area which Ferguson-Smith and his colleagues worked on was the prenatal diagnosis of neural tube defects (NTDs). This was of particular importance in the West of Scotland, which had one of the highest incidence

rates of NTDs in the United Kingdom.³² The main inspiration for this work came from the demonstration by Brock and Sutcliffe in 1972 that increased levels of α -fetoprotein in amniotic fluid were often found in pregnancies in which the foetus had a NTD. Shortly after Brock and Sutcliffe's publication Ferguson-Smith and colleagues tested 150 amniotic fluid samples they had frozen from prior amniocentesis to measure their α -fetoprotein levels.³³ All of their samples had α -fetoprotein levels which were expected based on the outcome of the pregnancy, i.e. the levels were raised in pregnancies with a NTD. The group began offering the test to their patients who had previously had one or more children with major central nervous system malformations. In September 1973 the group published their findings of an investigation into the use of amniotic fluid α -fetoprotein in the diagnosis of NTDs, which was one of the first studies of this kind in the United Kingdom. They tested 140 samples which helped to form their control group for the experiments, and also undertook amniocentesis on 20 patients who were at an increased chance of having a foetus affected by a NTD.³⁴ 18 of the 20 higher chance patients had normal α -fetoprotein levels, and by the time the paper went to print, six of these had gone on to have healthy children. Of the two who had high levels of α -fetoprotein, both chose to terminate their pregnancies, and both foetuses were found to have anomalies consistent with NTDs.³⁵

Whilst raised levels of amniotic α -fetoprotein could be used as a diagnostic tool, obtaining the fluid via amniocentesis was not without risk. The procedure of amniocentesis is thought to cause a 1% increase in miscarriages compared to the normal population rate, and many women were therefore concerned about undergoing amniotic fluid sampling. A potential solution to this problem was proposed when Brock published his findings in 1973 that α -fetoprotein migrated across the placenta and could be measured in maternal serum levels. By analysing blood from the pregnant woman it would be theoretically possible to uncover those who were at a higher risk, and refer them on for further diagnostic testing. A major pilot study to investigate the use of maternal serum α -fetoprotein was carried out in the West of Scotland from 1975 until 1977 by Ferguson-Smith and colleagues, the results of which can be found in Table 1 (below)

The increased participation of women in the screening process resulted in a notable decrease in the total birth rate for neural tube defects, which declined from 4.3 per 1000 in 1976 to 1.7 per 1000 in 1981 in the West of Scotland.³⁶

	Phase 1	Phase 2
Dates	Until 30/06/76	Until 30/06/77
No. of Participants	6,122	11,585
Gestation Period	15-20 weeks	16-20 weeks
Detection Levels	87.5% of pregnancies with an anencephalic foetus and 71.4% with an open spina bifida foetus were detected.	100% of anencephalic and 81.2% of open spina bifida foetuses were detected.
Overall Impact	Decreased the birth frequency of open neural-tube defects in 6122 pregnancies by 63.3%.	Decreased the birth incidence of open neural tube defects by 81.4%.

Table 1 – Details and Results of the msAFP screening programme carried out in the West of Scotland

With the demand for prenatal testing services continuing to increase, it became apparent that the laboratory facilities available to the department were inadequate. After being appointed Chair of Medical Genetics in 1973, Ferguson-Smith set out to raise funds to build new accommodation for the department, and the end result was the Duncan Guthrie Institute of Medical Genetics, which opened in Glasgow in October 1980. The Duncan Guthrie Institute was believed to be ‘the first of its kind in the U.K.’ which was ‘designed and built to provide the community with comprehensive genetic services and to provide facilities for teaching and research in Medical Genetics’.³⁷ In 1980 the West of Scotland Regional Genetics Service covered six Area Health Boards – Greater Glasgow, Argyll and Clyde, Lanarkshire, Ayrshire and Arran, Dumfries and Galloway, and Forth – which had a combined total population of around 2.9 million, with 36,000 births annually.³⁸ A large proportion of these pregnancies were utilising the prenatal diagnostic services which the new Institute enabled, with nearly 500 new families seen at the Genetics Clinics in 1980. In 1980, 71.4% of all pregnancies in the West of Scotland underwent maternal serum AFP screening to test for open neural tube defects,³⁹ and in the same year over 1200 women had their pregnancies tested for foetal anomaly by amniocentesis,⁴⁰ compared to only 13 amniocentesis tests in 1970.⁴¹

Prenatal testing changed antenatal care in an unprecedented manner, with the foetus becoming an accessible entity available for study. These figures highlight how the developments which had occurred in the field were incorporated quickly into clinical practice in the West of Scotland. In less than twenty years the department led by Ferguson-Smith developed from a one room cytology unit focused on research, to an institute which was able to screen the majority of the pregnant population prenatally. Prenatal testing programmes provided women with the option to terminate an affected pregnancy if they chose to do so, and the high numbers of women taking part in prenatal screening programmes led to a decrease in the number of babies born with chromosome disorders and NTDs. Whilst this raises a number of ethical questions which led some women to opt out of taking part in prenatal screening programmes, the majority of women are still keen to have their pregnancies tested. Thus it can be said that the development of prenatal testing has been a key feature of medical genetics in the twentieth century, as shown by the case study of the West of Scotland.

References

- 1 Agneta Sutton, *Prenatal Diagnosis: Confronting the Ethical Issues*, (London: The Linacre Centre, 1990), p. 23.
- 2 *Ibid*, p. 20.
- 3 Douglas Bevis, 'The Antenatal Prediction of Haemolytic Disease of the Newborn', *The Lancet*, 259 (1952), p. 395.
- 4 *Ibid*, p. 397.
- 5 Fritz Fuchs and Povl Riis, 'Antenatal Sex Determination', *Nature*, 177 (1956), p. 330.
- 6 Mark Steele and William Roy Breg, 'Chromosome Analysis of Human Amniotic-Fluid Cells', *The Lancet*, 287 (1966), p. 385.
- 7 David Brock and Roger Sutcliffe, 'Alpha-fetoprotein in the Antenatal Diagnosis of Anencephaly and Spina Bifida', *The Lancet*, 300 (1972), p. 197.
- 8 S. Campbell, F.D. Johnstone, E.M. Holt and P. May, 'Anencephaly: Early Ultrasonic Diagnosis and Active Management', *The Lancet*, 300 (1972), p. 1226.
- 9 J. Bang and A. Northeved, 'A New Ultrasonic Method for Transabdominal Amniocentesis', *American Journal of Obstetrics and Gynaecology*, 114 (1972), pp. 599-601.
- 10 Robert Harrison, Stuart Campbell and Ian Craft, 'Risks of Fetomaternal Hemorrhage Resulting From Amniocentesis With and Without Ultrasound Placental Localisation', *Journal of Obstetrics and Gynecology*, 46 (1975), p. 391.
- 11 Peter Harper, 'Interview with Malcolm Ferguson-Smith, 2003.' *Interviews with Human and Medical Geneticists series*, <<http://www.genmedhist.info/interviews/Ferguson%20Smith>> [Accessed 10 July 2015], p.2.
- 12 Malcolm Ferguson-Smith, 'Putting Medical Genetics into Practice', *Annual Review of Genomics and Human Genetics*, 12 (2011), p. 2.
- 13 Ferguson-Smith, 'Putting Medical Genetics into Practice', p. 2.

- 14 Harper, 'Interview with Malcolm Ferguson-Smith', p. 4.
- 15 Malcolm Ferguson-Smith, Bernard Lennox, William Mack and John Stewart, 'Klinefelter's Syndrome Frequency and Testicular Morphology in Relation to Nuclear Sex', *The Lancet*, 270 (1957), p. 167.
- 16 Harper, 'Interview with Malcolm Ferguson-Smith', p. 4
- 17 University of Glasgow Archives, Papers of Malcolm Andrew Ferguson-Smith, UGC 188/1/1/4, Correspondence between Ferguson-Smith with Professor John Anderson, p.5 (letter dated 18th August 1992).
- 18 UGC 188/1/2/3, Correspondence about a variety of career issues, p. 51 (letter thought to from October 1959).
- 19 Harper, 'Interview with Malcolm Ferguson-Smith', p. 9.
- 20 UGC 188/1/2/5, Correspondence concerning the establishment of the lectureship in medical genetics which was established in 1961 for Ferguson-Smith, p. 33.
- 21 Ibid, pp. 35-36.
- 22 UGC 188/2/2/2/5, Memoranda on 'Department of Medical Genetics, Yorkhill Hospitals. Current Status and Future Development' 1977, and 'Medical Genetics at Glasgow University' 1979, p. 8.
- 23 M.A. Ferguson-Smith, 'Prospects for Reducing the Frequency of Genetic Disorders', *Proceedings of the Royal Society of Medicine*, 67 (1974), p. 40.
- 24 M.A. Ferguson-Smith and M.E. Ferguson-Smith, 'Screening for Fetal Chromosome Aberrations in Early Pregnancy', *Journal of Clinical Pathology*, 29 (1976), p. 166.
- 25 Ibid, p. 167.
- 26 Ibid, pp. 170-171.
- 27 Ibid, p. 166.
- 28 M.A. Ferguson-Smith and J.R.W. Yates, 'Maternal Age Specific Rates for Chromosome Aberrations and Factors Influencing Them: Report of a Collaborative European Study on 52965 Amniocenteses', *Prenatal Diagnosis*, 4 (1984), p. 29.
- 29 Ibid, p. 29.
- 30 Ibid, p. 29.
- 31 Ibid, pp. 29-30.
- 32 UGC 188/3/3/1/6, Ferguson-Smith correspondence with Michael Ashley-Miller, p. 10.
- 33 UGC 188/3/3/8/6, Ferguson-Smith correspondence with Rodney Harris, p. 12 (letter dated 17th May 1973).
- 34 Lindsey D. Allan, M.A. Ferguson-Smith, Ian Donald, Elizabeth M. Sweet, A.A.M. Gibson, 'Amniotic-fluid Alpha-fetoprotein in the Antenatal Diagnosis of Spina Bifida', *The Lancet*, 302 (1973), p. 524.
- 35 Ibid, pp. 523-524.
- 36 Ferguson-Smith, 'The Reduction of Anencephalic and Spina Bifida Births', p. 371.
- 37 UGC 188/2/2/7/4, Correspondence and papers regarding the Duncan Guthrie Institute's mural titled, 'Medical Genetics in the Prevention of Handicap' by the Artists' Collective, p. 16.
- 38 UGC 188/2/2/7/2, The Duncan Guthrie Institute of Medical Genetics, p. 8.
- 39 Ibid, p. 9.
- 40 Ibid, p. 9.
- 41 UGC 188/2/2/2/5, Memoranda on 'Department of Medical Genetics, Yorkhill Hospitals. Current Status and Future Development' 1977, p. 19.

THE TWENTY FIFTH HALDANE TAIT MEETING

A HISTORY OF SUNSHINE; FROM GOOD TO BAD AND BACK AGAIN

48 members and friends attended this memorable Haldane Tait Lecture, held at the Craiglockhart Campus of Napier University in Edinburgh, on 18 May 2016. Dr Richard Weller, of the University of Edinburgh gave a very entertaining and erudite review of the effects of sunlight on health. He started by describing heliotherapy in the general treatment of tuberculosis and Finsen light therapy for tubercular lesions of the skin, these therapies becoming less popular once antibiotics were adopted for the treatment of tubercular disease. Following this, for a number of years, the effect of sunshine on the skin was increasingly seen as bad, because of the risk of inducing malignant changes. Dr Weller's view was that it was time to re-appraise the effects of sunlight and look at them more positively.

Considerable detail was given of recent work on the effects of sunlight on mortality from cardiovascular and cerebrovascular disease, which as Dr Weller showed, is more prevalent in higher latitudes, so that those living in Scotland are more at risk than those in southern England. He described a number of experiments, investigating the effect of sunlight on the skin and its role in releasing nitric oxide, a potent vasodilator, which lowers blood pressure. Dr Weller has produced a TED talk which can be viewed, using the link below, which gives the background to his lecture.

https://www.ted.com/talks/richard_weller_could_the_sun_be_good_for_your_heart/transcript#t-760453

THE TWO HUNDRED AND FIFTH ORDINARY MEETING

The Two Hundred and Fifth Ordinary Meeting of the Society was held in the Montrose Museum and Art Gallery, Panmure Place, Montrose on Saturday 18 June 2016 and was attended by 29 members or guests. The meeting started with a tour of Montrose Museum. Following an excellent lunch at the Links Hotel there were three speakers. Dr Andrew Orr gave a paper on "Chassar Moir : a Great Montrosian and world renowned medical pioneer" and Mr John Chalmers gave a short address on his personal memories of Chassar Moir, who was his uncle. The third speaker, Dr Christopher Pell, took as his subject

“230 years of care – a history of Psychiatry in Montrose”. A brief summary of Dr Orr’s paper follows :-

CHASSAR MOIR : A GREAT MONTROSIAN AND WORLD RENOWNED MEDICAL PIONEER

John Chassar Moir was born in Montrose on 21 March 1900, his parents being John Moir and Bella Pirie. He grew up in Montrose, going to school at Montrose Academy. Formative experiences when he was young included an admission for TB to Kingussie Sanatorium in 1908-09 and the death of his older brother Kenneth at the battle of Loos in 1915. He studied medicine at Edinburgh University, qualifying in 1922. In 1924 he worked as a ship’s doctor on a voyage to India and in 1925 he did General Practice locums in Edinburgh, Reigate and Redhill before becoming assistant surgeon at the East Surrey Hospital. In 1927 he undertook a study trip to Europe, visiting Vienna, Budapest, Leipzig, Heidelberg and Berlin and in 1929 he was appointed as Assistant Obstetrician at University College Hospital, London. Here he worked with Harold Ward Dudley on Ergot alkaloids, with the aim of finding a non-toxic quick acting and therapeutically useful treatment for post-partum haemorrhage. This led to the isolation and purification of Ergometrine in 1935, a discovery which Chassar Moir was determined should be free from the possibilities of commercial exploitation. It became freely available and was rapidly adopted as the treatment of choice around the world. However, Dudley’s sad and early death later that year rather eclipsed the proper recognition of this great innovation.

In 1933 he married Grace Hilda Bailey, a theatre sister. During 1936-37 Chassar Moir worked on a re-design of Minnitt’s gas and air analgesia machine for obstetric analgesia. The modified apparatus produced faster and more effective pain relief and its self-limiting administration made it safer. In 1937 he was appointed as the first Nuffield Professor of Obstetrics and Gynaecology at Oxford University, a post he was to hold for 30 years. At Oxford he was given new wards at the Radcliffe Infirmary, a new Nuffield Maternity Home and he headed an international acclaimed research team. His major operative contributions were in the field of vesico-vaginal fistula repair and he wrote extensively on this and travelled widely to demonstrate and lecture on his technique. He retired in 1967 and while this gave him more time with his children and grandchildren, he continued to write and lecture. He died in Oxford on 24 November 1977. In the British Medical Journal he was remembered as “A great and gentle man; a man who did more than anyone living to save the lives and relieve the miseries of women” “The death of

Chassar Moir has taken from us one of the most distinguished and best loved men in Obstetrics and Gynaecology in the 20th Century". His name is remembered in Montrose through the Chassar Moir Maternity Unit set up in 1989 and of which his wife wrote "I think that this small unit in his home town would probably be nearer to his heart than many other recognitions of his life and work here and around the world"

Dr Orr's talk ended with a quotation from Chassar Moir from his address at the Centenary Celebrations at Queen's University Hospital, Ontario.

"To each student listening I would now make a simple request. When next you handle the ergometrine ampoule – pause for a moment. Give a thought to the strange fungus that infests the head of the rye grass, to St Anthony and his monks, to the immense sum of learning that ergot research has added to medical science; and, not least, thank God for His provision of this strange and wonderful medicine."

He also referred to a book written by Chassar Moir's daughter, Priscilla Moir Sharp, entitled *Chassar Moir, a Biography and Personal Family Memoir*, (published 2015 by Windrush Group ISBN 978-0957489516)

Dr Christopher Pell then read a paper on the history of Psychiatry in Montrose

230 YEARS OF CARE: A HISTORY OF PSYCHIATRY IN MONTROSE

Susan Carnegie

The history of the provision of psychiatric care to the people of Angus begins with that of its foundress - Mrs Susan Carnegie of Pitarrow. Born Susan Scott in 1744, she was the eldest daughter of Mr David Scott - then Treasurer of the Bank of Scotland and at that time engaged in the change from the old monie Scots to sterling in the throes of the Jacobite Rebellion. Despite the turbulent times she was born into, Susan had a relatively settled upbringing in the North Angus area. She spent much of her time engaged in the arts, with poems published in the local journals including a particularly poignant one about the ruins of nearby Dunnottar Castle. She attracted several suitors, marrying in 1769 to one George Carnegie and soon thereafter moved into Charleston House just north of Montrose. The couple had 9 children, 8 of whom survived to adulthood. Whilst George Carnegie spent much of his time travelling between his business interests in Scotland and Gothenburg, Susan devoted her time to works aimed at improving the lives of the local community. The family contributed to the building of bridges and the setting up of a savings bank for women. In the 1770s Susan's attention turned to the lot of the insane, who, until that time had been housed in the Tolbooth on the high street of

Montrose, kept shackled and in squalid conditions. Mrs Carnegie's stated aim was to "rid the town of Montrose of a nuisance, that of mad people being kept in prison in the middle of the street, and the hope that by providing a quiet and convenient Asylum for them, some of these unfortunate persons might be restored to society." She was assisted in the endeavour by Provost Alexander Christie, and through the setting up of a public subscription boosted by parish church collections, they raised the money to fund the initial hospital building.

The First Hospital

The hospital was completed and took in its first patients in May 1782, and its first Keeper, James Booth, was employed along with a team of wardens. The local parishes contributed to the upkeep in return for their parishioners being afforded the chance to access the asylum when the need arose. With continued involvement from Susan Carnegie, the asylum began to build a name for itself, and was granted its first Royal Charter in 1811 by George III. By this stage, the asylum was becoming overcrowded, and so it was extended with upper floors being added. Regular inspections by the Board of Lunacy began, and the lack of a dedicated physician for the asylum was noted — medical cover being at that stage provided by local doctors in the town of Montrose. The town itself was also expanding, and the asylum was no longer on the edge of town but now had a saw mill and a fish curing works as its new neighbours. With the death of Susan Carnegie in 1821, the running of the asylum was handed over to the Asylum Board, and talk began of moving the hospital to a new site.

By this time the need for a dedicated "Mad Doctor" had been met, with the appointment of WAF Browne in 1834 to the post of Physician Superintendent. Browne had trained under Esquirol and Pinet in France, and he brought the ideas of ending the shackling of patients and of modernising practice at the hospital. He presented a series of lectures to the Asylum managers entitled "On What Asylums Were, Are, and Ought to Be." Following his departure to the Crichton Royal in Dumfries, regular appointment of Medical Superintendents to the hospital became the norm. Browne was followed by Drs Poole, McGavin, Morrison and Gilchrist over the next few decades.

Sunnyside

By the 1850s the overcrowding at the asylum had become unacceptable, and the purchase was arranged of a 52-acre site at Sunnyside Farm in Hillside village, just north of Montrose. Construction then began on The Main Building. Far from the modest beginnings of the original hospital building, this altogether larger project was designed by WF Moffatt of Edinburgh at a

cost of around £20,000 (£2.5 million in today's money) and was meant to be able to accommodate 300 patients. The relocation and management of patients on the two sites was overseen by Dr James Howden, who served for 40 years between 1857 and 1897. James Niddrie was appointed Head Keeper, and Mrs Wright was appointed Matron. The original hospital was kept on and used mainly to care for elderly and longer stay patients until 1866. It was eventually sold to the War Office in 1889 and used as the Panmure Barracks until its demolition in the 1950s.

The new hospital continued to grow, taking patients from across Angus, South Aberdeenshire and from the Shetland Isles. It was during the latter part of the 1800s that we begin to see patients' accounts of their stays. Two notable examples are the artistic and poetic works of Charles Altamont Doyle, (Sir Arthur Conan Doyle's father), made during his admission to the hospital, and the many sculptures made by Adam Christie, the "Gentle Shetlander."

Overcrowding continued to be an issue, and additional buildings were opened on the site including the Hospital Block (1891) for pauper patients, and the lavishly decorated Carnegie House for fee paying patients (1899) with its wood panelled ceiling in the central dining room depicting the 12 signs of the zodiac. To this were added Howden Villa (1901), North Esk Villa (1904) Westmount Cottages (for staff, 1905), Booth House (nurses' home, 1935) and Angus House (1939). Tennis courts, a bowling green and pavilions in the grounds provided exercise opportunities, whilst the farm buildings and a dairy (1925), tea room, hospital shop and Industrial Therapies department provided employment for patients able to contribute in this way. Other signs of technological progress were seen - electrical lighting was introduced, along with radio and later television. The local Radio Sunnyside was one of the earliest and longest continually running hospital radio stations in Scotland.

The War Years

During the two World Wars, the hospital accommodated additional patients as other Scottish asylums were taken over to house the returning wounded. Seven staff lost their lives during the Great War - they are commemorated in a memorial which still stands in the grounds - and one, Sergeant Ripley, was awarded the Victoria Cross. Dr Shaw worked throughout 1914 - 1918 without taking leave, at times being the only doctor for the entire site.

It was during the Second World War, though, that the hospital came closest to active conflict, when the site was bombed during October 1940 by German aircraft returning from a bombing run on the nearby Montrose Harbour. Five bombs fell within the grounds, one narrowly missing the main building, and another hit North Esk Villa, causing damage to the kitchen area there. Nurse

Violet Reid was on duty and, despite being injured in the blast, attended to injured colleagues and managed to calm patients before seeking medical attention herself. She became the first Scottish woman to be awarded the George Medal for her heroic actions.

Into Modernity

Following the war, new advances in psychiatric treatment saw a fall in in-patient numbers, which had peaked at 1052 during the hostilities. Electroconvulsive Therapy was used by Dr JC Anderson from at least 1943 and was so successful a treatment that the Hospital Board reported a decline in income of £2500 for the year, as longer hospital stays were avoided. The inception of the National Health Service, advances in psychiatric treatment, with the introduction of psychotropic medications, and a shift in social attitudes towards de-institutionalisation all contributed to the reduced need for in-patient beds. Under the new terms of the National Health Service the hospital adopted the name The Royal Mental Hospital of Montrose, before changing to its final name in the 1960's - The Sunnyside Royal Hospital.

During this time, the hospital was incorporated into the Eastern Region Health Board (later NHS Tayside), with the last psychiatrist to hold the title of Physician Superintendent of the hospital being Dr Lyons. His successor Dr Kenneth Keddie worked in the hospital for over 30 years between 1966 and 1998, latterly alongside Dr Grayson, and oversaw the move into the current healthcare arrangements of today. Dr Keddie was also a keen historian. He founded the Sunnyside Museum and wrote a biography of the sculptor patient Adam Christie.

In June 1981 the hospital celebrated its Bi-centennial with a grand Royal Gala. HRH Princess Alexandra attended a fete held within the grounds and gardens of the hospital and unveiled a commemorative plaque at the site of the original Montrose Lunatic Asylum in the town of Montrose itself.

Decline and Closure

From the 1980s onward though, the site was increasingly oversized for the local need. Buildings began to be mothballed and closed as patients were able to move on and out into the community. The hospital adapted and changed, with some wards becoming rehabilitation wards, while some took in more dementia patients. The regional Alcohol Unit was opened in the 1970s, and Carnegie House was converted to an admissions unit, but the decline in numbers needing the hospital continued. Howden Villa closed in 1985, Angus House in 1994, and North Esk Villa in 1998.

2001 saw further retraction into just the Main Building and Carnegie House - with the closure of the hospital block, OT and Industrial Therapy building, and some administrative and laundry buildings. Planning at this time began for the full closure of the site, and by 2008 Carnegie House closed its doors for the last time, leaving only the Main Building and Booth House open for patients and office space respectively.

It was clear by this time that care in a smaller and more modern setting was the way forwards, and NHS Tayside commissioned the construction of the Susan Carnegie Centre at nearby Stracathro Hospital to replace the Sunnyside site. Provision was made for just 52 beds (coincidentally exactly 1000 less than the hospital accommodated at its peak) split between two wards for older aged patients, and a ward for working age patients. Sunnyside Royal celebrated the ending of care at the Hillside site with another Gala day and a Thanksgiving Service in the local Hillside Church in the summer of 2011, and finally closed its doors on 7 December 2011.

Bibliography

WAF Browne *On What Asylums Were, Are and Ought to Be-Being the substance of Five Lectures Delivered Before the Managers of the Montrose Royal Lunatic Asylum* 1837, A and C Black, Edinburgh. Available at <https://archive.org/details/b28795234>

Alexander Allan Cormack *Susan Carnegie - Her Life of Service*, 1966, Aberdeen University Press.

Kenneth Keddie *The Gentle Shetlander. The Extraordinary Story of an Artist in the Shadows*, 1984, ISBN 978-0862280888

Richard Poole *Memoranda regarding the Royal Lunatic Asylum, Infirmary and Dispensary of Montrose* 1841, J and D Nichol, Montrose, A and C Black, Edinburgh.

AS Presly *A Sunnyside Chronicle 1781-1981* 1981, Dundee, Tayside Health Board.

Dr Pell's paper was followed by tea, which brought to a successful conclusion the 2015-2016 session of the Society.

The Scottish Society of the History of Medicine

Constitution as revised at AGM of 1999

1. The Society shall be called "THE SCOTTISH SOCIETY OF THE HISTORY OF MEDICINE," and shall consist of those who desire to promote the study of the History of Medicine.
2. A General Meeting of Members shall be held once a year on the last day of October or within four weeks of that date, to receive reports and to elect Members of Council and (when required) Office Bearers. The quorum shall be 20 members and decisions shall be taken by a majority. The President shall have a casting vote, and there shall be no proxy voting.
3. The management of the affairs of the Society shall be vested in a Council, comprising a President, a Vice-President (serving as Deputy President and President-Designate), a Secretary, and a Treasurer (the four Office-Bearers), along with nine other members ("Ordinary Members of Council"). The immediate Past President may also be included as a member of Council, as provided below. The quorum at Council meetings shall be six and there shall be no casting vote.
4. The President and Vice-President shall be elected at an Annual General Meeting, to serve normally for a tenure of three successive years, and shall not hold their post for more than three successive years, but shall be eligible to serve again after the lapse of one year if re-elected. In addition, the immediate Past President may remain a member of Council for two years after the end of his or her term of office as President.

The Secretary and Treasurer shall be elected at an Annual General Meeting, to serve normally for a tenure of three successive years, and shall be eligible to serve again if re-elected, but should not normally hold office for more than six consecutive years.

The names of all candidates for election as Office-Bearers and of their proposers shall be made known to the Secretary before the Meeting at which election is to take place.
5. Any Office-bearer may be required to retire from office by resolution at any AGM, but the proposer and seconder of the resolution shall give a month's notice in writing to the Secretary (or in the case of the Secretary to the President), and the resolution must be pre-circulated to Members in the papers for the AGM.
6. Three Ordinary Members of Council shall be elected at each Annual General Meeting, to serve normally for a tenure of three successive years, and shall not be eligible for re-election at the end of their tenure until a year has elapsed; each year, the three Ordinary Members most senior by date of election shall demit office. If an Ordinary Member is otherwise unable to complete his or her term of office, the Council shall co-opt a replacement to complete the term, and this replacement shall be eligible at the end of the term to be elected for a further full term, despite having already served part of a term.
7. The Council shall have power to co-opt at any time other members who in their opinion are fitted to render special service to the Society. Such co-opted members shall be in addition to those in clause 6 above, and the co-option shall require the approval of each subsequent Annual General Meeting if it is to continue further.
8. To recognise outstanding service to the Society or to Medical History in general, upon occasion an Honorary Member of the Society may be elected at any Annual General Meeting. Any name proposed (with the name of a proposer and seconder, and details of the case) must be intimated in writing at least three months before the meeting to the Secretary, so that they are included in the pre-circulated Agenda for the meeting. Honorary Members shall pay no subscription.
9. The Annual Subscription shall be reconsidered from time to time by Council and reported to the Society at the Annual General Meeting.

The Subscription (or revised Subscription) will fall due immediately following the AGM. A Member whose subscription is outstanding for a full year shall cease to be a member of the Society.
10. The Council shall ensure that full and punctual Accounts are kept for the Society and shall cause to be prepared once a year a Statement of Accounts and a Balance Sheet for the previous year.
11. The Society's funds shall consist of funds in the hands of the Treasurer, together with other sums of money and securities. These funds shall be held by the Treasurer, acting with the President and the Secretary (the Trustees), in trust for the Society's aims and objects, and in furtherance of this purpose the three Trustees shall have the following powers:
 - (a) Payments shall be made out of income or capital of the Society as the Trustees shall determine; all cheques shall require the signatures of two of the three Trustees.
 - (b) The Trustees may purchase and sell stocks, bonds, securities and other investments.
 - (c) The Trustees may delegate the management and investment of the Society's funds to the Treasurer and will consult with him on a regular basis as to the performance of the investments and assets comprising the Society's funds.
12. The Secretary shall keep brief Minutes of the proceedings both of the AGM and of the Council, shall prepare Agenda, and shall conduct the correspondence of the Society.
13. Meetings shall be held at least twice yearly, and the place of meeting shall be in any of the University centres, or elsewhere, as the Council may decide.
14. This Constitution may be amended at any General Meeting of the Society on four weeks' notice of the proposed amendment being given by the Secretary, such amendment to be included in the Agenda circulated for the Meeting. No such alteration or amendment shall have the effect of prejudicing the Society's charitable status in law.
15. The Council may resolve that the purposes for which the Society's funds are held can no longer be carried out by them or could be carried out more efficiently by some other body, fund or institution, and shall so report to a General Meeting of the Society; and if the General Meeting agrees, require the Trustees to make over the Income and Capital of the Society's funds to that other body, fund or institution whose aims and objects most closely resemble those of the Society, and so bring the Society to an end.