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THE HISTORY OF ANAESTHESIA SOCIETY PROCEEDINGS



Volume 35

Proceedings of the Meeting in Liverpool
13th November 2004 and Joint Meeting with the
Section of Anaesthesia at the RSM 4th March 2005

Includes Index vols 30-35 and members addresses

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HISTORY OF ANAESTHESIA SOCIETY

2004 Autumn Scientific Meeting, Liverpool Medical Institution

13th November

Organisers: Dr Anne Florence, Dr Peter Drury

The Society would like to express gratitude to the following for generous support:

Abbott Laboratories
The Anaesthetists Agency
Dr Archibald Brain
Dr David Gray

oooOooo

Joint Meeting with Section of Anaesthesia, Royal Society of Medicine

4th March 2005

Organisers: Dr Anne Florence, Committee of Section of Anaesthesia, RSM

Proceedings of the History of Anaesthesia Society

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The Society acknowledges with thanks the photographs taken by Dr Geoff Hall-Davies.

HISTORY OF ANAESTHESIA SOCIETY

Council and Officers – 2004-2005

President	Dr Peter Morris, Leicester,
President-Elect	Dr Adrian Padfield, Sheffield
Honorary Secretary	Dr Anne Florence, Cheshire
Honorary Treasurer and Membership Secretary	Dr John Pring, Penzance
Honorary Editor	Dr Peter Drury, Liverpool
Assistant Honorary Secretary	Dr Neil Adams, Bury St Edmunds
 Council Members	 Dr Edward Armitage, Brighton Dr Frank Bennetts, Wokingham Dr Henry Connor, Hereford Mrs Sally Garner, Leicester Dr Adrian Kuipers, Shrewsbury Dr Michael Palmer, Bury St Edmunds Professor Sir Keith Sykes, Devon Professor Anthony Wildsmith, Dundee
 In attendance	 Dr Miles Rucklidge, Lancaster
 Co-opted Member	 Professor Douglas Bacon, Minnesota
 Honorary Members UK and Ireland	 Dr Aileen Adams CBE Dr Thomas Boulton OBE TD Professor Cecil Gray Dr Jean Horton Dr Douglas Howat Dr David Zuck
 Honorary Members Overseas	 Professor Jean Lassner, Paris Dr Lucien Morris, Washington Professor John Severinghaus, San Francisco Professor Doreen Vermeulen Cranch, Holland

Editorial

It was decided to combine the papers given at the Autumn 2004 meeting in Liverpool with those given at the joint meeting with the Section of Anaesthesia at the RSM in March 2005, since three papers would hardly justify a separate volume. Although the RSM is celebrating its bicentenary in 2005, that of the Section will not be until 2007, the reasons for which are explained in Aileen Adams' account of its history. However it was very appropriate that the three speakers had been Presidents both of the Section and of the HAS. The other speakers were Douglas Howat on the Society of Anaesthetists, the precursor of the Section, and Adrian Padfield on Hickman, whose eponymous medal is awarded by the RSM.

Members of the Liverpool Medical Institution enjoy showing off their listed building to visitors. This was not possible at the 1997 Liverpool meeting as it was undergoing refurbishment. The Hon Secretary, Anne Florence, who played a considerable part in the organisation of both meetings, began the proceedings with a history of the Institution, and was followed by the Hon Editor on Matthew Turner, a Liverpool surgeon who manufactured and prescribed ether 80 years before Morton's demonstration. Ann Ferguson quoted two case reports from the 1890s in which oxygen was prescribed by the Liverpool physician Charles Macalister, who was her mother-in-law's father.

Other Liverpool-based speakers were Tony Gilbertson, reviewing the literature on intensive care post-Copenhagen, and David Gray on the surgeon Harry Kostoff, who thought little of anaesthetists. The guest lecturer, Sammy Ramir, who spoke on the complexity theory, is a University lecturer and a member of a Primary Care Trust in Liverpool.

Two speakers provided a Scottish flavour. Jimmy Payne recalled Latta's use of intravenous saline in the treatment of cholera in 1932, and Elizabeth Bradshaw became interested in the Marrett head when doing a locum in the Orkneys.

The arts were represented in Aileen Adams' paper on Handel's father, who was a barber surgeon, and in Tony Carter's paper, which demonstrated that Dickens' knowledge of chloroform administration was featured in *A Tale of Two Cities* in the account of Charles Darnay's escape from the Bastille.

PMED

FUTURE EVENTS

- 2005** 14th-18th September. Sixth International Symposium on the History of Anaesthesia, Queen's College, Cambridge.
Contact Neil Adams (adams118@keme.co.uk)
- 2006** 21st-23rd June. HAS Summer Meeting, Rochester, Minnesota, USA.
- 2006** 7th-8th September. Malvern.
- 2007** 28th-30th June. Dundee.

Speakers at the Liverpool Meeting 13th November 2004



**Dr Anne
Florence**



Dr P Drury



**Dr Ann
Ferguson**



Prof J Payne



Dr A Carter



**Dr Aileen
Adams**



**Dr Elizabeth
Bradshaw**



**Dr A
Gilbertson**



Dr D Gray



Dr Samir Ramir

**Invited Speaker
at the Liverpool
Meeting
13th November
2004**

**Speakers at the
Royal Society of
Medicine Meeting
4th March 2005**



Dr Aileen Adams



Dr D Howat



Dr A Padfield

Members and Guests attending the Liverpool Meeting

Dr Aileen Adams, Cambridge	Dr Geoffrey Hall-Davies, Redditch
Dr C Neil Adams, Bury St Edmunds	Dr Jean Horton, Cambridge
Dr Edward Armitage, West Sussex	Dr Adrian Kuipers, Shrewsbury
Dr Frank Bennetts, Wokingham	Dr Peter Morris, Leicester
Dr Colin Birt, Southend	Dr Angela Murray, Liverpool
Dr John Blizzard, Chelmsford	Dr David Nightingale, Liverpool
Dr Thomas Boulton, Reading	Dr Adrian Padfield, Sheffield
Dr Elizabeth Bradshaw, London	Professor James Payne, London
Dr Anthony Carter, Stoke-on-Trent	Dr Yash Pole, Manchester
Dr Henry Connor, Hereford	Dr John Pring, Penzance
Dr Ian Corall, London	Dr Nigel Rose, Ledbury
Professor Alan Dronsfield, Derby	Dr Miles Rucklidge, Lancaster
Dr Peter Drury, Liverpool	Dr Timothy Smith, Chippenham
Dr Alex Dugdale, Liverpool	Professor Sir Keith Sykes, Devon
Dr Ann Ferguson, Broadstairs	Dr David White, London
Dr Anne Florence, Liverpool	Professor J A W Wildsmith, Dundee
Dr Anthony Gilbertson, Liverpool	Mrs Trish Willis, AAGBI
Professor T Cecil Gray, Liverpool	Dr Tod Young, Altrincham
Dr David Gray, Liverpool	

Guest Lecturer: Dr Samir Ramir, Liverpool

Members and Guests attending the London Meeting

Dr Aileen Adams	Dr Jenny Jamieson
Professor Anthony Adams	Dr Phillip Jones
Dr C Neil Adams	Mr Satyr Kapur
Dr Nicholas Allison	Dr Mary Knowles
Dr Peter Amoroso	Dr Krysia Konieczko
Dr Truis Andersskog	Dr Adrian Kuipers
Dr Michael Archer	Dr Richard Laishley
Dr Edward Armitage	Mr J Leigh
Dr Elizabeth Ashley	Dr Bernard Logan
Dr Beverley Astley	Dr Beryl Magrath
Dr Craig Bailey	Dr Colin McLaren
Dr Moyna Barton	Dr Lorna Mendonca
Dr Mohamed Bashir	Dr Peter Morris
Mrs Judith Bennett	Dr Ann Naylor
Dr Rex C Bennett	Mrs Inge Newton
Dr F E Bennetts	Dr Nicholas Newton
Dr Sabyasachi Bhattacharya	Dr John Nunn
Dr Colin Birt	Dr Adrian Padfield
Dr John Blizzard	Dr Gordon Paterson
Dr Thomas B Boulton	Professor James Payne
Dr Aubrey Bristow	Dr Frederick S Plumptre
Dr Doreen Browne	Professor Brian Pollard
Mrs Tatiana Buhrkohl	Dr E Andrew Proctor
Dr Caroline Carr	Dr Ray Radford
Dr Ronald Cohen	Dr Stan Rehor
Dr Henry Connor	Dr Anna-Maria Rollin
Dr Ian Corall	Dr Anthony Rubin
Dr John G Dalgleish	Dr Miles Rucklidge
Dr Pamela Daly	Dr Geoffrey Rushman
Dr Odile Diamond	Dr Wendy Scott
Professor Alan Dronsfield	Dr Mary Sherry
Dr Peter Drury	Dr Timothy Smith
Dr Bee Eppel	Dr John R Spears
Dr Ann Ferguson	Mrs Michelle Sykes
Dr Anne Florence	Professor Sir Keith Sykes
Dr Juan Gil-Rodriguez	Dr William D Turner
Dr Michael Gough	Professor Michael Vickers
Dr Phillippa A Groves	Dr David Walmesley
Dr Geoffrey Hall	Dr Frank Walters
Dr Geoffrey Hall-Davies	Dr Barbara Weaver
Dr Angela Hamilton	Professor Nigel Webster
Dr Nigel Harper	Mr David Wenyon
Professor David Hatch	Dr Sean White
Dr Seton R T Headley	Professor John A W Wildsmith
Dr Penny Hewitt	Mrs P Willis
Dr David J Hill	Dr Edward Young
Dr Anita Holdcroft	Mrs Sally Young
Dr Jean Horton	Dr John Zorab
Brig Ivan Houghton	Dr David Zuck
Dr Douglas Howat	

THE LIVERPOOL MEDICAL INSTITUTION

Dr Anne Florence

Honorary Secretary, History of Anaesthesia Society

The history of the Liverpool Medical Institution, one of the oldest medical societies in the world, is closely linked to the development of the medical profession and medical education in Liverpool.

In the early 1770s three gifted young surgeons, Henry Park, John Lyons and Edward Alanson proposed the creation of a 'Surgeon's Book Club'; the 'purchase of books for general use' which they would then divide between themselves at the end of each year when the 'material would be of no further merit'. Before the plan came to fruition, the physicians of the Infirmary expressed an interest in contributing to the scheme on the understanding that all the books purchased would be kept within the Infirmary. It is impossible to put an exact date to the inauguration of the scheme. Writing in 1808, Henry Park inferred that no books were actually purchased until early 1778. If this was, indeed, the case, as numerous local historians have recorded, the idea germinated in 1770 and had a protracted gestation period.

In August 1778, the first Liverpool Dispensary, founded by charity to provide advice and medicines for the poor, opened in a small rented house in Princes Street with its own dedicated staff of physicians, surgeons and apothecaries. Almost immediately, they expressed a desire to participate in the 'library scheme' agreeing that the books purchased, while being the property of both institutions, should remain in the Infirmary.

One year later this collection was adversely criticised by the other medical practitioners in the town who accused the medical officers of both the 'charities' of keeping information to themselves. Consequently the 'Gentlemen of the Faculty of the Public Infirmary and the Dispensary of Liverpool' [the original proprietors of the books] met at the Union Coffee House on Mount Pleasant on 7th October 1779. At this meeting it was unanimously resolved to establish a medical library, which would be funded by subscription. It would be known as the Liverpool Medical Library. Membership would be open exclusively to the gentlemen of the town and neighbourhood with an interest in medicine that wished to subscribe. At this meeting, twenty 'rules' for the conduct of the Library were laid down. Life membership could be purchased for five guineas. The 'ordinary' subscription would be half a guinea annually. Apprentices would be elected members for the period of their indentures for the payment of two guineas in advance. The apothecaries of both charities would have free membership in perpetuity but would be responsible for the care of the books.

Despite his absence from the meeting in October 1779, the leading physician, Matthew Dobson (1732-84), was elected as the first President of the Library. The hand scripted Minutes of this first meeting have confused historians. In item 22 the statement that 'Dr Matthew Dobson would be President for the ensuing year' is followed, without explanation, by a list of 20 names, including all those previously recorded as present with the exception of Thomas Avison, the apothecary at the Dispensary. Two names or signatures are indecipherable. The list also includes John Rutter (1762-1838), then a mere lad of seventeen and Thomas Renwick also young and unqualified. Various suggestions have been made about the origins of this list. A prominent medical historian of the period, Thomas Bickerton, has speculated that John Rutter may have subscribed to the 'Rules' while an apprentice in

Liverpool. Others have suggested that the list included a record of members who had joined at a later date. Certainly both Rutter and Renwick had qualified from Edinburgh in 1786 before any subsequent recorded meeting of the Library Committee. It is also highly possible that one of the barely decipherable signatures at the foot of the page of minutes belongs to J Currie.

At first the book collection was kept in the Infirmary in Shaw Street. However, in 1782 soon after the Dispensary moved to larger, purpose built premises in Church Street an apparently controversial decision was made to transfer the books to the Dispensary. It is not clear when this move took place. A 'Catalogue of the books in the Medical Library at the Dispensary' listing 1,400 books was published in 1799.

As the 18th century was drawing to a close, the medical practitioners of Liverpool led by James Currie and John Rutter, played a prominent role in the development of unique opportunities for social and cultural intercourse with other professionals and businessmen of the town who shared an interest in the arts, sciences and philanthropy.

James Currie (1756-1805), the son of a Church of Scotland minister from Dumfriesshire, greatly influenced the general advance of the profession in Liverpool and activated interest in the dissemination of medical knowledge, which undoubtedly sowed the seeds for the foundation of the Liverpool Medical Institution. He was instrumental in the revival of the Literary Society to which the leading businessmen, William Roscoe and William Rathbone and the medical practitioners, Henry Park, Gerard and Fenwick were early recruits.

Acknowledgement of Currie's ability soon spread beyond Liverpool. In 1788 he was elected to membership of the Medical Society of London; in 1791 he became a Fellow of the Royal College of Physicians of Edinburgh and in 1792 a Fellow of the Royal Society. He was a man of strong character and great ability. Despite recurrent ill health and an exacting clinical practice he found time to continue his study of philosophy, political theory and literature and wrote the first biography of Robert Burns - *The Works of Robert Burns: with an Account of his Life and a Criticism on his Writings* which was published in 1800.

John Rutter, a direct descendant of the Rutters of Kingsley Hall, Frodsham was born in Liverpool on 23rd August 1762 to Thomas Rutter, a Liverpool Chandler and his Cumbrian wife, Mary Brownson. Tragically, John's father died at the age of thirty five when John was only six years old. What happened to John after the death of his father is unclear. His mother returned to Wigton, the town of her birth, where she remarried ten years later. Thomas's sister Rachel had married into the third generation of the influential Rathbone family whose name is synonymous with the progressive commercial and academic development of Liverpool. It is possible that John remained in Liverpool under the care and influence of his uncle, William Rathbone who, in the course of time, had arranged for John Rutter to be apprenticed to a medical practitioner in the town. This could account for the mysterious appearance of his name in the Minutes of the inaugural meeting of the Liverpool Medical Library. The Rutter and Rathbone families were Quakers. John's presence was certainly recorded in the Minutes of a meeting of the Hardshaw Society of Friends which was held in October 1783. During that year, at the age of 21, Rutter matriculated at the Medical School of Edinburgh University from where he graduated MD in 1786, with a thesis on 'Phthisis Pulmonalis'. After a short period in London he settled in medical practice in Liverpool in January 1788.

In 1792, Rutter joined the staff of the Dispensary where he became 'deservedly esteemed as a sound and sagacious physician'. He was a creative genius, clear and concise. Once he had considered that something was necessary he presented logical and practical arguments and brought all his powers to bear on the attainment of that particular objective, time and time again.

As no Minutes or contemporary records can be found for the twenty years following the inauguration of the Liverpool Medical Library it can only be presumed that the management progressed smoothly and thrived under the 'Rules' of establishment until the Committee met on the 12th July 1800. This meeting was apparently adjourned rapidly after Drs Lyons, Currie, Bostock, Brandreth, Renwick and Rutter had approved a series of eleven resolutions, which were to significantly change the management structure and membership of the Library. The 'perpetual management committee' was to be replaced by a committee of seven members who would be elected annually. Subscription rates for apprentices were reduced while those for other members were increased and membership was opened to all interested citizens. Charles Blundell, the first businessman to join was subsequently elected to the Committee at the Annual General Meeting on 8th September 1800.

Two special meetings took place in 1806. At the first in July, a request from the Liverpool Medical and Physical Society to hold meetings in the Library was discussed. There is, however, no record of the decision made or of any meetings held. Mysteriously, a note appeared in the Minutes of the Medical Library in March 1813 stating that a sum of money which had belonged to the 'late Medical Society of this town' had been paid into the Library funds.

At the second meeting in August 1806, Park proposed that the Library be relocated in the Infirmary in Shaw Street 'where it would be housed in a room built for that purpose at the expense of the subscribers'. This room was duly built within the archway above the patients' entrance facing Shaw's Brow and was completed before the end of 1807.

An important, influential educational development followed in 1812 when three prominent physicians, Bostock, Vose and Traill and a group of merchants founded the Literary and Philosophical Society as a forum for the 'general discussion of science and literature in an atmosphere free from the exclusive pursuit of commerce'. Thomas Stuart Traill, a native of the Orkney Islands had arrived in Liverpool in 1801 shortly after graduating from the University of Edinburgh. He rapidly established a highly successful medical practice and developed a pioneering interest in forensic medicine. He served the Literary and Philosophical Society as Secretary for many years and played a major role in the foundation of the Royal Institution as a centre for literature, science and the arts. It opened in 1817 in a large mansion in Colquitt Street which had been built in 1799 by a rich merchant. The Royal Institution was the most important cultural and medical development of 19th century Liverpool and owed so much to Roscoe and his circle. This magnificent building became the venue for meetings of the Literary and Philosophical Society and many other societies and became the home of the Royal Institution School of Medicine and Surgery when it opened in 1834.

The profound influence of the Literary and Philosophical Society continued for over 40 years. Many advances in medicine and allied sciences were still discussed at Society meetings long after the opening of the Liverpool Medical Institution. At consecutive meetings in January

1847 first the local dentist, Felix Yaniewicz and subsequently the surgeon, Alfred Higginson demonstrated the pieces of apparatus which they had personally designed for the administration of ether. Later, on 29th November 1847 James Waldie gave an account of his personal discovery of the anaesthetic properties of chloroform, which he had produced by the purification of chloric ether in the laboratory of Liverpool's Apothecaries Hall in the early 1840s.

John Rutter who had served as President of the Liverpool Medical Library in 1809 was re-elected in January 1827, just as the Corporation gave notice that the Infirmary was to be demolished in preparation for the building of St George's Hall necessitating relocation of the Library. Rutter agreed to open discussions with the Corporation for the 'provision of a suitable building on a convenient, nearly central piece of land not required for any purpose more important'. Having rejected the suggestion that the Library should move to the new Infirmary in Brownlow Street, Rutter recommended that the Corporation should allow them the use of the vacant building located behind the Cattle Market Weighing Machine Room in Lime Street. The Corporation acquiesced immediately and by September the building was ready for use by the Library. All the subscribing members showed their appreciation by sending their warmest thanks to the Mayor and Common Council for their prompt action to provide the spacious premises now occupied by the Library. The next change came in March 1832 when the educational role of the Library was extended by opening on Saturday evenings for the discussion of medical topics. Bickerton speculated that those Saturday evening meetings stimulated the formation of the Liverpool Medical Society when forty members of the medical profession met in the rooms of the Library on 10th January 1833.

Further trouble loomed for the Library on 13th April, 1833 when the President, Dr Squires, received notice that the Liverpool and Manchester Railway Company wished to repossess the Cattle Market for the development of Lime Street Station. Two days later, John Rutter presided at a meeting of the Committee of the Medical Society at which it was agreed unanimously that they should cooperate fully with the Members of the Medical Library in negotiations to obtain a new building commensurate with the needs of both societies and the profession in general. Rutter proposed that the time had come for the profession to acquire a building entirely for its own use of a design suitable to accommodate a library, pathological museum, a large meeting room for lectures, a designated committee room and a residence suitable for a Librarian. He counselled that if the Corporation did make the expected gift of land, the profession should be prepared to bear the cost of the building, estimated to be £600.

To enable him to execute 'this remarkable vision' Rutter, the acknowledged leader of the profession and trusted friend of many influential citizens, was re-elected President of the Medical Library in 1834 with the full authority to negotiate with Liverpool Corporation or any other organisation. In December 1834 Rutter wrote to all the doctors of Liverpool inviting them to subscribe to the creation of his dream. He personally donated £300 and other doctors a further £300. On 3rd March 1835 a Committee of eleven was elected to oversee the building of a 'great medical institution' to act as Trustees under the guidance of Rutter and Jeffreys with Rogerson as Secretary.

On 14th and 22nd March, Dr Jeffreys launched a public appeal in the *Liverpool Mercury* inviting the inhabitants of Liverpool to contribute to this development which would prove of undoubted benefit for the town. By now the cost had risen to between £1,500 and £2,000. The Corporation responded promptly with a generous gift of £1,000. By October 1835, a further

£2,400 has been subscribed including a significant gift from Rutter's cousin, William Rathbone.

After protracted discussion with the Corporation, the Trustees were granted the ownership in perpetuity - the free lease - of land at the corner of Mount Pleasant and Hope Street on 18th July 1835. This land, valued at £557.10s was the site of Martindale's Inn, the tavern in which William Roscoe had been born, and the adjacent bowling green. Work commenced on the site in August 1835.

As President of the Medical Library and **Chairman** of the Trustees, John Rutter presided at the opening of the new building on this very site on 31st May 1837, an event preceding both the laying of the foundation stone of St George's Hall and the opening of Lime Street Station. Once the building was completed Rutter **relinquished** his role as Chairman of the Trustees, devolving the management upon the other Trustees under the guidance of either Dr Carson or Jeffreys. He presided over the Library Committee for the last time on 20th June 1837.

The completion of the building in under two years was a remarkable achievement but despite the generosity of the Corporation and Dr Rutter's personal donations of £900 the Trustees of the building were heavily in debt. However, a successful bazaar organised in the new building in October 1838, by Mrs Dawson, the Treasurer's wife secured sufficient funds to clear the debt. Before he died in his 77th year, on 16th October 1838, John Rutter had the satisfaction of knowing that his 'brain child' was free of debt.

The foundation of the Liverpool Medical Institution was a feat of the highest statesmanship. The aims and objectives for which it was established are no less remarkable. The concept remains a tribute to the diligence and perseverance of one man, John Rutter. From its foundation to the present day, the Liverpool Medical Institution has been the centre of medical life in the city and its environs, associated with the dissemination of knowledge of high quality in ever-expanding fields while providing for the social well being of the members. Succeeding generations of members of the Liverpool Medical Institution and their families owe a great debt of gratitude to John Rutter.

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MATTHEW TURNER: 18TH CENTURY LIVERPOOL CHEMIST AND SURGEON

Dr Peter Drury
Emeritus Consultant Anaesthetist, Liverpool

Introduction

Matthew Turner lived and worked in Liverpool from approximately 1756 till his death in 1789. In Meteyard's biography of Josiah Wedgwood he is described as 'chemist and free-thinker, a man of unusual attainments. A good surgeon, a skilful anatomist, a practical chemist, a draughtsman, a classical scholar and ready wit; he formed one of a group of eminently intellectual men who did much to foster a literary and artistic taste among the more educated classes of Liverpool'. The recently published *Dictionary of National Biography* refers to his numerous and diverse activities, and states that he is best remembered for his interaction with Wedgwood and Joseph Priestley.

A N
A C C O U N T
OF THE EXTRAORDINARY
M E D I C I N A L F L U I D,
C A L L E D
Æ T H E R.

By M. TURNER, SURGEON,
I N
L I V E R P O O L.



L O N D O N ·
Printed by J. WILKIN, at the Bible in St. Paul's Church-yard.

FIG. 2. Title-page of Turner, on Æther

Title page of Turner on ether

Wedgwood

Why should he be mentioned in Wedgwood's biography? Wedgwood was a regular visitor to Liverpool to supervise cargoes of his products for export. In 1762, en route to Liverpool, he injured his knee (possibly due to a fall from his horse) and was brought there for convalescence. Matthew Turner was called, perhaps because he was near at hand. To help alleviate his boredom Turner introduced him to Thomas Bentley, an influential man with wealthy connections in London, who subsequently became Wedgwood's partner and had a strong influence on his life. Further, Turner's skills in chemistry were useful to Wedgwood, since he had knowledge of varnishes, bronze powders, colouring agents and staining of glass.

Priestley

Turner's other famous connection was with Joseph Priestley. Priestley had been appointed Principal of the Academy for the sons of dissenters at Warrington, about 16 miles from Liverpool. He was an occasional visitor to Liverpool, and in 1763 invited Turner to give a course of lectures in chemistry at the Academy which became a regular feature. Priestley's previous scientific interests had been confined to physics and electricity, and it has been suggested that he underwent a 'momentous conversion' to a subject in which he was subsequently to make major discoveries. Others have thought this unlikely; the lectures would have been fairly elementary and Priestley would surely have had some foreknowledge.

Priestley was a Presbyterian minister, and in 1760 had published *Letter to a Philosophical Unbeliever*. An answer to this was published in 1782 under the name of William Hammon. It now seems agreed that it was a pseudonym for Turner, who was an atheist, but perhaps did not want this known among his cultured friends.

Turner the chemist

Nothing is known about Turner's earlier life, but by the time he came to Liverpool he was an accomplished chemist. He is often referred to as a doctor and a surgeon, though his qualifications have not been verified. In 1761 he published *An Account of the Extraordinary Medicinal Fluid called Aether*. He had his own laboratory, and he manufactured, sold and dispensed ether. He describes it as follows:

'It is a kind of Ethereal Oil, produced by the Decomposition of the Vinous Spirit by Means of the Vitriolic Acid, and differs essentially from both Vinous Spirits and Essential Oils in several Respects, tho' it agrees with them in some, as will appear hereafter; but as the Vinous Spirit may be decomposed by means of all three Mineral Acids, viz., the *Vitriolic*, the *Nitrous* and the *Murine*, and as these all act differently on the Spirit, they will, of course, produce three different Kinds of AETHER; which from the Name of the Acid employ'd in making them, are term'd *Murine*, *Nitrous*, or *Vitriolic*: The last only is the Kind here understood, its Properties being more singular and extraordinary, and, as an AETHER, more perfect than either of the others; the Reason of which seems to be, that the *Vitriolic Acid* is a much stronger Agent on the Spirit, and more perfectly decomposes it, than either the *Nitrous* or *Murine*'.

Turner alludes to the fact Isaac Newton and Robert Boyle were familiar with ether, but neither seemed to be particularly interested.

Turner the entrepreneur

His product was advertised in the press, and he had commercial outlets in London and Dublin. He noted that 'there are preparations sold by the same name, which are very imperfect imitations'. He did in fact describe tests for purity. A one ounce phial cost two shillings, and a ½ ounce phial one shilling; possibly expensive for its time. Discounts were given to Druggists, Apothecaries, or the 'Gentlemen of the Faculty' (whoever they were) who used any considerable quantity. To prevent its escape and loss a small quantity of water was put into each phial, which was supposed to be kept with the cork downwards, so that the ether was prevented from evaporating. His daughter continued the manufacture after his death.

Therapeutic recommendations

Turner recommended ether by ingestion, generally two teaspoons taken in wine, for headaches, gout, rheumatism, pain in the stomach and intestines, whooping cough, asthma, pleuritic pains, deafness, and early cataract. For headaches he adds:

'In stubborn cases it will likewise be serviceable to sniff a little ether up the nostril, either alone or mixed with equal parts of lavender water, Hungary water or Brandy; or it may be more convenient to apply a bit of linen rag, wetted with Aether, up the nostrils. Any of these means must be repeated if the pain is so urgent as to require it'.

Thus Turner recommended ether for pain relief nearly 100 years before Morton's demonstration of surgical anaesthesia in 1846.

Acknowledgements

I should emphasise that the research for this paper is not my own. The work was done by the late John Utting, formerly Professor of Anaesthesia in Liverpool, who died in 1998, and this could be regarded as a tribute to him. Before his death he asked Professor Jennie Hunter to organise the material. There was assistance from Bill Bickerstaffe, then a Lecturer in the Department of Anaesthesia, who delivered an extended version of the paper to the Liverpool Medical History Society.

TWO CASES ILLUSTRATING THE THERAPEUTIC VALUE OF OXYGEN BY CHARLES JOHN MACALISTER MD FRCP 1860-1943

Dr Ann Ferguson, Retired Consultant Anaesthetist
Queen Elizabeth the Queen Mother Hospital, Margate

Introduction

In this hall on 28 November, 1895, was held the 5th ordinary meeting of the Liverpool Medical Institution for 1895-6. The President, Mr Chauncy Puzey was in the chair.¹ He was a surgeon, a keen proponent of antiseptics, and dead against women attending meetings here.² These meetings were held fortnightly, each contained three or four items, and were well attended, usually by over 70 doctors. At this meeting, following items on Vyrnwy water and pityriasis rubra (the latter by Dr Stopford Taylor, a frequent contributor on matters dermatological)³ but before *A Life Table for Liverpool*, came the presentation that I wish to discuss. This was entitled *Two cases illustrating the therapeutic value of oxygen*, later printed in full in the *Lancet*.¹

I have a personal interest in this paper which I first found as a reprint when we were going through my mother-in-law's old papers. The author, Dr C J Macalister, a well-known Liverpool physician, was her father by his second marriage. There were over a hundred other papers and books, written over a period of over fifty years, with subjects as diverse as left handedness, a new cell proliferant, venereal disease and sea sickness, but (and I have read all of them) this is the only one in which the word oxygen is mentioned.

Dr C J Macalister

Macalister was born in 1860 in the seaside town of Bootle, and brought up in Liverpool, which was then a shipping town. He qualified from Edinburgh in 1884, training under Chiene, Argyll Robertson and Joseph Bell, and he saw Thomas Keith operate.⁴ He did a house job at Myrtle Street. By 1895, he had seen a lot of empyema, both in clinical practice and as pathologist to the Royal Southern Hospital. This was the subject of his MD thesis, written by hand and presented in 1895. Even this does not mention oxygen.

So, in studying this paper, I have set myself tasks; firstly describing to you the cases in this paper, secondly discussing the management of the two cases described in the light of the knowledge of the time, and whether the two patients survived because of, or despite the treatment, and thirdly, trying to work out why he used oxygen and above all, why he thought it necessary to present these cases, and write them up in the *Lancet*.

Case One

The first case was that of a 39 year old man, admitted to the Stanley Hospital. He was stout, short necked, and of intemperate habits. He was oedematous and oliguric. The position of the heart beat was masked by the adipose thickness of the parietes. (Macalister always wrote like that!)

The patient's condition deteriorated, with stertorous breathing, cyanosis, and profound coma. The diagnosis was understandably confused.

It was evident that he was suffering from some poison, self generated, which interfered with oxidation, and it was on this account that I at once inserted into one of his nostrils the rubber tube connected with a cylinder of oxygen and allowed him to inhale the gas very freely, pure oxygen through one nostril, and air through the other.

The patient improved, and turned himself onto his side. I think that this is mentioned to emphasise the improvement in conscious level. He was cupped, he regained consciousness and was eventually discharged, cured.

I would suggest that this man had a partially obstructed airway, and that the rubber tube acted like a nasal airway, improving the obstruction as well as oxygenating him; a combination of a nasal airway and CPAP.

Case Two

Nearly a year later a young woman, who was at home, ingested 8 pills each containing half a grain of morphia. As $\frac{1}{2}$ grain is 30mg, the total dose was 240mg. I have asked Peter Homan of the History of Pharmacy Society about this, and 30mg was a reasonable dose at this time. Macalister arrived $1\frac{1}{4}$ hours after the last tablet. Is this too slow a response time? I think not. He had to get dressed - track suit over illegally purloined theatre suit was not this man's style! He always went out properly dressed, including a top hat. He had to travel there from his house in Rodney Street. Originally he shared a horse and trap with Dr Thurston Holland (of early X-ray fame). By now he probably owned his own, but his man would have taken time to get the horse ready. (He was the first person in Liverpool to buy a car, a Stanley Steamer, about a year after this paper.)

On arrival, he found Dr Murray Moore in attendance who had 'with great promptitude' applied mustard to the calves, and administered $1/10$ grain atropine hypodermically. The patient was absolutely insensitive to pain, propped up in bed, with a respiratory rate of 8 per minute, a slight twitching of the face, and divergent strabismus which they attributed to thebaine in the morphia. They decided that a stomach washout with permanganate of potash was impractical as they could not stop artificial respiration.

Dr Moore went for a battery (we are not told why, because it is never mentioned again), and a cab, presumably horse-drawn, was sent for a cylinder of oxygen. There is an earlier report⁵ of when oxygen was required in Oswestry, they had had to send to London, but as this oxygen arrived within an hour, I think the supply was nearer to hand. They gave her oxygen via a vulcanite tube through her nose, and her colour improved. She started to breathe on her own so both artificial respiration and oxygen were discontinued, but she became cyanosed again and the oxygen was replaced.

Two hours later she worsened again in spite of treatment, so they did what everyone in Liverpool did when in doubt, they called Dr Carter. Dr Carter was 5 feet 4 inches tall, a heavily bearded fierce looking man, (actually one of the kindest men alive, a Physician in Liverpool and Professor of Materia Medica and Therapeutics), who was Macalister's first father in law. In the 1890s it just was not done to die in Liverpool without having seen Dr Carter first. Dr Carter recommended digitalin (dose

unspecified) subcutaneously and strong coffee injected into the rectum. The patient gradually improved, and could be left.

Treatment: Artificial Respiration

I am discounting the mustard, digitalin, atropine and rectal coffee, because I cannot explain them.

Fashions had changed through the years, but at this time the Howard method of artificial respiration was in vogue.⁶ Benjamin Howard was a New York physician who had published his own five page pamphlet in 1869: *Plain rules for the restoration of persons apparently dead from drowning*, of which the most important rule was 'Let some bystander hold the tip of the tongue out of one corner of the mouth with a dry handkerchief'. This method is the only one possible as we are told that the girl was propped up in bed.

Airway management should have been very close to Macalister's heart, as in 1888⁴ he had had to do an emergency tracheostomy on his father at the dinner table.

Treatment: Oxygen

John Hunter had recommended dephlogisticated air into the nostrils⁷ and Felice Fontana⁸ in 1780 had experimented on it. His friend Ingenhousz had proposed a trial of it for sick people but nothing seems to have come of it. Pressure cylinders became available in about 1868, principally for nitrous oxide, and there was interest in containing oxygen for the production of limelight in theatres. It was obviously in use clinically, but I still did not understand why he had taken the trouble to write it up. I went back over ten years from this presentation, looking at the *Lancet*, the *British Medical Journal* and the *Liverpool Medico-Chirurgical Journal* to see what I could discover about the status of oxygen therapy at that time. In the index of these journals oxygen comes just before oysters, but oysters are more frequently mentioned.

I found that oxygen was available in cylinders, manufactured by Brin's method of heating barium oxides. The physical properties of oxygen were extensively investigated.⁹⁻¹¹ There were articles recommending¹², and an equal number decrying the effects of local oxygen in ulcers,¹² croup,¹³ chlorosis,¹⁴ eclampsia,^{15,16} alopecia,¹⁷ febrile states,¹⁸ splenic leucothymia,¹⁹ carbonic oxide poisoning,²⁰ congestive cardiac failure²¹ and influenza.²² On the Continent²³ it was of great value in phthisis, diabetes, congestion of the lungs and cholera. Apparatus for the administration of oxygen began to be described.²⁴ A moderate sized iron bottle containing compressed oxygen, a bag of goldbeaters skin into which the amount for use on each occasion could be introduced, and a mouthpiece with a graduated screw for regulating its dilution with air.

In France, recipients of oxygen were placed by order of the Prefect of Police in pavilions destined for the reception of the drowned on the banks of the Seine.²⁵ It was recommended in a mixture 12/88 with nitrous oxide for ten minutes of anaesthesia.²⁶ A case benefited by administration of oxygen during anaesthesia²⁷ was written up, and in one article apparatus for its administration in 'anaesthetic narcosis' is illustrated.²⁸ This contains the sentence: 'It is too much to hope that bottles of it will be kept in every operating theatre'; and also²⁹ 'Why not ask the specialists who administer nitrous oxide and other anaesthetics to undertake the

supervision and provision of oxygen inhalations'. There was one case in the *Lancet*³⁰ in which oxygen had been used successfully in opium poisoning.

Caution

Notes of caution were struck; eg. it may only have a transient therapeutic effect,³¹ its use from cylinders is dangerous,³² it is not oxygen they need in severe pneumonia because the blood is unable to use it, but they need iron.³³ In 1893 a committee set up to investigate the use of oxygen in the treatment of choke damp in coal mines concluded that it was no better, and much more expensive than air.³⁴

I believe that it had not been very effective because of intermittent use; they would fill the bag, administer that, and call it a day. Also it was often administered with arsenic and strychnine, and supply was uncertain and still fairly expensive; if obtained in bottles it required a large deposit, and treatment was still largely in people's homes.

Why publish?

So there were two points of view. If however, we narrow the search down to Liverpool, I think I can see why he wanted to publicise these cases. In the *Liverpool Medico-Chirurgical Journal*³⁵ in 1888 Couper Cripps had published an abstract of his MD thesis, recommending the use of oxygen for the respiratory trouble of coma in all cases.

William Carter had been the author of two articles^{36, 37} in which he describes how he had often used oxygen, sometimes manufacturing it at the bedside, but he urged caution: 'If inhaled suddenly in large quantities the gas is excessively stimulating, and may be followed by, if it does not produce, quite a "tetanic condition of the muscles"'. The gas as supplied in steel bottles is very greatly condensed, and its sudden expansion chills the atmosphere and the patient.

So, I have come to the conclusion that Macalister wrote this up because he was working in Liverpool, where oxygen had been used sensibly for some time, especially by his father-in-law. It seemed a good idea to publish another paper **when** its use had undoubtedly contributed to the patient's survival, at a time when real doubts were being voiced about its usefulness in the national medical press.

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THE INTRODUCTION OF INTRAVENOUS SALINE INFUSIONS IN CLINICAL PRACTICE

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The therapeutic value of intravenous saline infusions was first demonstrated by Thomas Latta of Leith in 1832¹ during the cholera epidemic that struck Edinburgh and its neighbourhood in January of that year.² The disease, manifested by violent vomiting and diarrhoea, was virtually unknown in the United Kingdom at that time and many doctors were baffled by the condition and confused about its management.

Cholera

Cholera had been gradually spreading westwards across Europe, and when an outbreak occurred in Hamburg in October 1831 the British Government was alerted to the potential dangers of the spread of the disease to the United Kingdom. On 8th October of that year the Privy Council issued instructions about the precautions to be undertaken to limit its spread. Simultaneously the Central Board of Health in London asked doctors to submit to the Board reports of their methods of treating and managing the condition.

The disease struck England in the same month and the first death from cholera was recorded in Sunderland on 26th October 1831 and according to Robert Christison,³ Professor of Medical Jurisprudence in the University of Edinburgh: 'The pestilence raged at Sunderland, Newcastle and their neighbourhood in England and in Haddington, Tranent and Musselburgh in Scotland without recourse being had to any measures which deserve mention'. Basically there was no help from Central Government, neither financial nor material. Fortunately for the citizens of Edinburgh and Leith their local authorities had set up their own Boards of Health and separate cholera hospitals were established, as described by Christison. Three of these were located in Edinburgh and one sited in Leith where it was staffed by two local general practitioners, Dr Thomas Latta and Dr Robert Lewins, both of whom were to play a vital part in the future management of the disease in the region. Incidentally the first case of cholera in the area was diagnosed in Leith on 27th January 1832.

Dr W B O'Shaughnessy

Meanwhile elsewhere other important developments were taking place. In particular on 3rd December 1831 a young doctor, Dr W B O'Shaughnessy, an Edinburgh graduate who had moved south to London, addressed the Westminster Medical Society on the subject of cholera and wondered 'whether the habit of practical chemistry which I have recently pursued might lead to the application of chemistry to the cure'. So engrossed was he in the cause and cure of cholera that he travelled a few days later to Sunderland 'to make myself practically acquainted with the celebrated disease'.

Shortly thereafter Dr O'Shaughnessy published two papers in quick succession in the *Lancet*. The first was entitled *Proposal of a method of treating the blue epidemic cholera by the injection of highly oxygenated salts into the venous system*, the safety of which he had tested on a dog but not in man. It was followed by the second, *Experiments on the blood in cholera*

which led him to recommend that the normal salts of the blood should be used for intravenous injection in the treatment of the disease.

Dr Thomas Latta

Dr O'Shaughnessy's recommendation was taken up by Thomas Latta in Leith who developed a suitable technique for the purpose. So successful was his method of resuscitating moribund patients that his friend and colleague, Dr Robert Lewins, wrote to the Central Board of Health in London to draw attention to the success of Dr Latta's technique. In so doing he commented to the effect that 'this is an astonishing method of medication and I predict will lead to wonderful changes and improvements in the practice of medicine'. The Board replied to Dr Lewins by asking him to persuade Dr Latta to provide a detailed description of his technique. Dr Latta did as requested but pointed out that the original concept came from Dr O'Shaughnessy. He had merely put it into practice with, it should be added, a remarkable degree of skill and courage. The Board referred the report to the *Lancet* and that journal published it in full. This resulted in a tribute from Dr O'Shaughnessy who wrote to the *Lancet* as follows: 'The results of the practice described by Drs Latta and Lewins exceed my most sanguine expectations'. The above contributions have been carefully analysed by Masson¹ and later by Consett.⁵ Both reviews are worthy of study, as is that of Christine Hoy.²

Intravenous Saline

It might be wondered why Dr O'Shaughnessy confined his experiments to a dog and did not himself put into practice his recommendation on the need for intravenous saline. The answer is simple; Dr O'Shaughnessy was 22 years of age at the time, had only graduated from the University of Edinburgh in 1830 and it is highly unlikely therefore that he had any cholera patients directly under his care. Thus it was left to Dr Latta to establish the technique of intravenous saline infusions. Since the practice was soundly based, logical, and above all successful it might be expected that it would be widely acceptable. That proved not to be the case and many of the therapies continuing to be advocated were often quite bizarre and, more importantly, useless. As the virulence of the epidemic gradually abated Dr Latta's observations were largely ignored, and 100 years were to pass before the value of intravenous therapy was properly and finally recognised.

Possibly the reason for this was that the two main protagonists of the technique had vanished from the scene; Thomas Latta died from pulmonary consumption on 19th October 1833⁴ less than a year after the epidemic had ended, and William O'Shaughnessy had left England the same year to enter the service of the East India Company. He was appointed assistant surgeon in Bengal on 8th October 1833 and later became Professor of Chemistry at the Medical College, Calcutta. When in Bengal he wrote numerous reports on various medical, chemical and other subjects, but devoted his attention largely to the development of the electric telegraph for which service he was knighted in 1856. He died at Southsea on 10th January 1889.⁶

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Active resuscitation! An early case

She had apparently reached the last moments of her earthly existence, and now nothing could injure her – indeed so entirely was she reduced that I feared I should be unable to get my apparatus ready ere she expired. Having inserted a tube into the basilic vein, cautiously – anxiously, I watched the effect; ounce after ounce was injected, but no visible change was produced. Still persevering I thought she began to breathe less laboriously; soon the sharpened features and sunken eye and fallen jaw, pale and cold, bearing the manifest impress of death's signet, began to glow with returning animation; the pulse which had long ceased returned to the wrist, at first small and quick, by degrees it became more and more distinct, fuller, slower and firmer, and in the short space of half an hour when six pints had been injected she expressed in a firm voice that she was free from all uneasiness her features bore the aspect of comfort and health. This being my first case, I fancied my patient secure and from my great need of a little repose left her in charge of the hospital surgeon (see Payne, Ref 1).

CHARLES DICKENS, CHLOROFORM AND A TALE OF TWO CITIES

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Introduction

Members of the History of Anaesthesia Society may remember a meeting in Croydon in February 1989 at which the late Dr Barbara Duncum presented a fascinating paper entitled 'Chloroform for Mrs Dickens'.¹ Dr Duncum described how, a few weeks after the discovery of chloroform anaesthesia in 1847, Charles Dickens had been forced to spend some time in Edinburgh when his wife Catherine sustained a miscarriage there. Whilst Catherine rested in bed, Dickens was entertained by 'a famous Edinburgh professor', undoubtedly James Young Simpson, who enlightened him regarding 'the facts about chloroform'.

In due course, Dickens and Catherine returned to London where a little over a year later, in January 1849, Catherine was safely delivered of her eighth successful pregnancy. Dickens later described how he had insisted on Catherine receiving chloroform, in spite of the doctors being 'dead against it' and four years before Queen Victoria was to make it fashionable. 'Administered by someone who has nothing else to do', he wrote, 'who keeps his finger on the pulse, and uses nothing but a handkerchief, I am convinced that it is as safe in its administration, as it is miraculous and merciful in its effects'.¹

Dickens' support for chloroform anaesthesia did not cease with the safe delivery of his wife and he continued to take a keen interest in the controversies that later surrounded it. One of those controversies, it is suggested, may even have helped provide the inspiration for one of his greatest novels.

Household Words

In January 1850, Dickens founded a new monthly magazine, *Household Words*, and installed himself as editor. It was here, in serial form, that some of his best known novels first appeared. As an editor, Dickens treated contributors to his magazine in a manner that was little short of dictatorial, insisting, for example, that all articles be published anonymously. Only Dickens' own name was allowed to appear in the magazine, which it does, not only on the front and back covers, but at the top of every page, inevitably giving the impression that he must have written the whole thing himself.

But Dickens went further than insisting that articles be published anonymously (or 'mononomously' as one aggrieved contributor described it),² for he also reserved the right to alter them, either, as he put it, to 'brighten' them, or to reflect his own frequently strong opinions. Inevitably, such actions infuriated contributors, many of whom were established novelists. Even more surprisingly, however, he was quite prepared to alter articles on more technical subjects, such as those about anaesthesia. Dickens published no less than four articles about chloroform anaesthesia over a seventeen year period from 1851 to 1868.³⁻⁶ The authors, most of them since identified from records, were generally either doctors or former doctors, although some passages, it is suggested, could only have been written by the great man himself.

‘(After 1847), the use of ether became general and the instrument-makers tried to strike out in a new branch of business (as in such cases they always do) by inventing elaborate, troublesome and costly machines, full of pipes and stopcocks; none of which were half so well adapted to the purpose of inhalation as a simple pocket handkerchief or a piece of sponge.’⁴

The inhaler described appears to be the one designed by John Snow in 1847. Snow is said to have enjoyed reading Dickens but he might have been less happy with this passage, which reflects Edinburgh’s preference for the handkerchief in chloroform inductions, rather than London’s thinking about ether. Fortunately, other references to Snow are rather more complementary.

The Woman in White

Dickens, as a novelist, gained a great deal of material from news stories that he published, and particularly from items in an associated magazine, *Household Narrative*, which he also controlled. Such stories often spent years hidden away in the deep recesses of his mind before finally re-surfacing woven into the fabric of a novel. In January 1850 for example, *Household Narrative* published a report about a reclusive woman who spent the rest of her life attired in a white wedding gown after her suitor blew his brains out in her presence, and the same issue carried a story about another woman who died after her dress caught fire. Ten years later, both these stories re-emerged as the character of the lovelorn Miss Havisham, Dickens’ own ‘woman in white’ in his novel *Great Expectations* (1860).²

The very next edition of *Household Narrative* contained a story known to all anaesthetic historians, for it concerned a solicitor who claimed that he had been ‘stupefied’ with chloroform by two women whilst he was walking along the Whitechapel Road.⁷ Other cases followed, and with the authorities concerned about possible unrest during the forthcoming Great Exhibition, the Lord Advocate, Lord Campbell, presented a bill to Parliament providing for the punishment of those using ‘chloroform and other stupifying things to enable them to commit felonies’. Doctors were concerned that such a bill might give chloroform a bad name, and in March 1851 Dr John Snow wrote a letter to Lord Campbell, which he published as a pamphlet, giving three reasons why it would be impossible to chloroform anyone against their will.⁸

The first article about chloroform, by Percival Leigh,³ a former doctor, was published in May 1851, just as Lord Campbell’s bill was being presented to Parliament and the Great Exhibition was opening its doors in Hyde Park. It praises Snow’s ‘well-written’ pamphlet and pours scorn on those who claimed they had been chloroformed by force, attributing their symptoms to the injudicious self-administration of alcohol and concluding: ‘it is no more easy to stupify anyone against their will by means of chloroform, than it is by means of brandy and water’.³

When supposed victims realised that their stories would not be believed, reports ceased to appear and the whole episode was quickly forgotten. It was not, however, forgotten by Dickens, for just as one news story was to inspire the character of Miss Havisham, so, many years later, this one appears to have provided Dickens with the idea for the climax to one his greatest novels.

A Tale of Two Cities

A Tale of Two Cities (1859) tells the story of two men, Charles Darnay, a wealthy upstanding aristocrat, and Sydney Carton, a good-for-nothing, both drawn to Paris at the height of the French Revolution and both in love with the delectable Lucie Manette. As an aristocrat Darnay is arrested, imprisoned in the Bastille, and awaits execution; but Carton, hearing of his rival's misfortune, decides to do that 'far, far better thing' and go to the guillotine in Darnay's place. However, he realises that as a man of noble principle, Darnay will never agree. He therefore decides he will have to use force.

On the eve of Darnay's execution Carton visits a 'small, dim, chemist's shop', where he purchases several 'small packets' which he places in his breast pocket. The following morning, he bribes his way into Darnay's prison cell where, standing beside him, he dictates for Darnay to write down what will be his own farewell letter. At the same time, he takes his cupped hand from his breast pocket and draws it over Darnay's face. Darnay is suspicious and asks: 'what is that vapour that I can smell?' but Carton reassures him. Once again he places his cupped hand over Darnay's face. Finally, Darnay realises what is going on, or thinks he does. He leaps to his feet, and with 'Carton's hand close and firm at his nostrils', he struggles violently but, 'within a minute or two', is 'stretched insensible on the ground'. Unconscious, Darnay is carried out to a waiting carriage where he quickly recovers and escapes to freedom and the fulfilment of his dreams.

Although Dickens does not actually refer to it by name, anyone reading *A Tale of Two Cities* would have had no difficulty identifying the vapour emanating from Carton's cupped hand as chloroform. However, they would also have realised that Dickens was writing about a period half a century before the discovery of chloroform anaesthesia. Furthermore, they would have realised that he was describing chloroform's administration in a manner that was by now considered to be impossible. Since *A Tale of Two Cities* is a historical novel, based on real events, it must surely have occurred to the novelist that he might be accused of implausibility. In his letter and pamphlet, *Snow* had given three reasons why he believed it would be impossible to chloroform anyone by force and why supposed victims must therefore have been lying. Firstly, he said, they had made no attempt to escape or to attract attention. Secondly, they had become instantly unconscious, failing to remember anything about the supposed incident and, in particular, the quite unforgettable smell of the chloroform vapour. And thirdly, they had taken anything up to twelve hours to recover; the following morning in the case of our solicitor friend. How, then, does Dickens' account stand up to Snow's objections?

Firstly, the scene takes place, not in the street, but within the locked confines of a prison cell where running away would not be an option. Secondly, Darnay takes a full two minutes to lose consciousness and during this time he struggles violently with the man whom he thinks has come to kill him. Whilst doing so, he not only asks about the vapour he can smell, but with 'disordered' faculties and breathing, he says that something has 'crossed' him, or made him feel strange. Finally, when he is dragged unconscious from his cell, 'a clock strikes two'. He comes round as 'a winter's night comes on dark', perhaps two hours later at the most. This dramatic scene, if not utterly convincing, is thus certainly persuasive, and is so far removed from the accounts given by alleged 'victims' that one suspects it could only have been written with the help of someone 'in the know'. Dickens certainly convinced his readers, for when *A Tale of Two Cities* was published in 1859, the scene was accepted without question as, in spite of innumerable Hollywood makeovers, it is to this day.

But what, one wonders, might John Snow himself have thought of it? Sadly, he died the previous year, so we can only guess. However, it would be nice to think that whatever his doubts as an anaesthetist, he would not have been slow, as a lover of Dickens, to share the opinions of generations then and since that *A Tale of Two Cities* is the work of true literary genius.

Clouds over chloroform

In the very month that publication of *A Tale of Two Cities* began a third chloroform article was published,⁵ this one written by a close personal friend, Sir William Overend Priestley, who was Queen Victoria's gynaecologist. It was an excellent choice, for having trained in Edinburgh with Simpson in the years following the discovery of chloroform anaesthesia, Sir William would have been familiar with all the controversies that had surrounded its use. By now, earlier chloroform controversies had long since been replaced by concerns about its safety. Sir William is reassuring, describing chloroform anaesthesia as 'safer than ice-skating or sea-bathing'. However, when Dickens published his final article on chloroform in 1868,⁶ three years before he died, the mood had changed, and the (unknown) author expresses the hope that nitrous oxide, then undergoing a revival, will 'supersede the use of the valuable, but rather dangerous anaesthetic, chloroform.'

Conclusion

Dickens was a great supporter of the many inventions that were daily making life easier, and he realised that people would want to read about them. Writers had long valued the dramatic possibilities of a temporary loss of consciousness; by replacing their ancient sleeping potions with the modern miracle of anaesthesia, it could be argued that he was simply bringing matters up to date.

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Copies of *Household Words* and *All The Year Round* may be consulted at Dickens' Museum.

ABSTRACT

A CLOSE SHAVE? THE LIFE OF GEORG HANDEL (1622-1697)

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George Frideric Handel (1685-1759), one of the greatest musical composers, was born in Halle (Saale) in what was then Saxony. After his initial musical education in Germany and Italy he came to England as a young man, and spent the rest of his life here. His life as a child has not been well described, either in the German or the English literature. It is not widely known that his father, Georg Handel, was a barber-surgeon of note, and almost invariably when his name is mentioned in English texts it is to say how he obstructed his son's musical career by preventing him from studying music. Central Europe at the time of George Frideric's childhood was in an unstable state, and those who survived its many wars were liable to die in the frequent outbreaks of plague. Archival records are scanty, but manuscripts have recently been found in Halle written in the hands of both Georg Handel and of his patients, and these throw light on his life and surgical practice.

This paper tells the story of Georg Handel's life. In a turbulent time he became an eminent surgeon who served as valet and barber to the Courts of Saxony and Brandenburg at Weissenfels, as well as becoming a distinguished citizen of Halle. The role of barber-surgeons in Central Europe is described, and it is shown how this differed from that in England and France, where they were restricted in their activities and not permitted to carry out surgical operations. The duties of barbers in Germany were less controlled and they were largely free to practice as they wished. An important part of Handel's practice was in public health and forensic medicine, and he frequently acted as an expert witness in court and compensation cases. Appointments to the ducal courts carried considerable prestige and privileges.

We also aim to dispel the notion that Georg Handel's influence on his son's musical career was as obstructive as has been claimed; we suggest that he was in fact a responsible father with his children's interests at heart. From his two marriages he brought up eight children of whom he had reason to be proud; all except two became connected with medicine either by profession or by marriage, and his son Karl followed in his father's footsteps by serving at the ducal court at Weissenfels.

George Frideric, the youngest son of his second marriage, conceived when he was 63, became the most famous of them all. When this son's genius became manifest his father, initially reluctant to encourage him in a career in music in such unstable times, was persuaded to arrange for him as good a musical education as was available in Halle. His career destined him to study and travel widely in Central Europe before settling in London. Here this son, in a country foreign to him, achieved success in his lifetime as a composer, performer and musical entrepreneur. Ultimately posterity has come to regard him as one of the greatest of composers. It is sad that his father, who died when his son was 12, did not live to see this.

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REX MARRETT AND HIS PORTABLE MACHINE

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Introduction

Rex Marrett was born in 1915, qualified at St Bartholomew's in 1940. He was educated at Felstead School where he enjoyed mechanical engineering taught by Mr Hall. It was in Langton Hewer's anaesthetic department at St Albans that he realised that anaesthesia could satisfy his interests both in medicine and engineering. Here he designed and made a drawover apparatus for trichloroethylene to provide analgesia for wound debridement on the wards. He added a second bottle downstream for ether to provide muscle relaxation for intubation.

Military Service

In November 1943 he joined the army, and took part in the Normandy Juno beach landings in 1944. In his memoirs he recounts that Caen was supposed to be taken in 48 hours but it took 30 days of extensive bombing. This was where he found the German mine rescue equipment. The soda lime was sealed so he borrowed a soldering iron, and with a coffee tin he converted it into an efficient closed circuit apparatus. He rejuvenated the soda lime by spreading it out on a biscuit tin lid over a Primus. The German oxygen cylinder could not be refilled so he took a 20 cu ft cylinder and Adams reducing valve from the field Boyle's machine. Using it as a drawover apparatus he could leave the patient's head and help the surgeon.



Figure 1

Marrett was posted to No 6 Field Surgical Unit (FSU) after Falaise and promoted to Major. This consisted of a surgeon, anaesthetist, 8 men, facilities for an operating theatre and 10 beds, all carried on two 3-ton lorries and a Humber staff car. At Louvain in Belgium he was visited by the surgeons to see his apparatus. He noted their spinal anaesthetics and the harsh way the patients were told to keep still. This confirmed a life-long preference for general anaesthesia. He also noted the deaths after thiopentone used in another FSU. In the Ardennes Dr Marrett was getting out his American Heidbrink machine when, out of the window, he saw two Germans on motorcycles. He realised they had 'overstepped' their position. He was not prepared to waste time dismantling the Heidbrink and 'dumped' it. He realised his equipment was superior in mobile conditions.

Portable Machine

After VE day he was seconded by the army for 9 months to develop a prototype of his machine. It had to be portable, with no rubber parts (for the tropics) and drawover facility if the gas supply failed. In Shaftesbury he made the first machine in wood. To impress the army he thought it should shine, so he varnished it and put it in the oven. Indeed it shone but also swelled and so he had to make last minute adjustments. Sadly this model has been lost. Rex Marrett invented the first interlock between trichloroethylene and soda lime to prevent its decomposition. He also designed a spanner to remove the three drums for chloroform, ether and trilene, as the orderlies were such enthusiastic polishers that they destroyed the airtight fit.



Figure 2

So impressed was the Ministry of Defence that they put his name up to the Royal Commission on awards for inventors with Whittle (of the jet engine) and Bailey (sectional bridging). Rex Marrett noted that Whittle received £100,000 and Bailey £50,000, while he was awarded £450 with which they bought their first caravan.

Post-war

After demobilization Rex Marrett began his career in London but when a friend told him of a consultant post in Coventry, which meant that he could join his family, he applied. The department consisted of two nurse anaesthetists who had given most of the anaesthetics during the bombing. As he said, these two ladies 'never bothered the coroner' and they retired in 1954 when the department had expanded. Sister Evans continued being the department administrator and Rex Marrett's assistant. He continued modifying his machine in his workshop, developing its portability for dentistry, and reported its use with over 1550 halothane anaesthetics. Rex Marrett kept up his love of sport and it was while playing tennis that he noticed increasing leg weakness. With his understated courage he underwent several spinal operations. Encouraged by his wife he took up golf, and designed and made 'Percy' (Figure 2), a one-seater buggy, and sold six. He died in March 2003.

Conclusion

On the 60th anniversary of the Normandy landings, I am pleased to present a paper on Rex Marrett who not only designed but also made his portable apparatus.

oooOooo

Days like these - 2nd November 1667

Samuel Pepys writes in his diary: 'Up, and to the office, where busy all morning. At noon home; and after dinner, my wife and Willett and I to the King's House and there saw Henry the Fourth. And contrary to expectation was pleased in nothing more than in Cartwright's speaking of Falstaff's speech about 'What is honour?'. The house full of Parliament men, it being holiday with them. And it was observable how a gentleman of good habit, sitting just before us eating of some fruit, in the midst of the play did drop down as dead, being choked, but with much ado, Orange Mall (nickname of Mary Meggs, who held the concession to sell oranges in the theatre) did thrust her fingers down his throat and brought him back to life.

HISTORY OF INTENSIVE THERAPY, CHAPTER TWO

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Introduction

In a previous paper¹ given at the Royal Society of Medicine I described the wonderfully successful treatment of respiratory failure by Dr Ibsen during the Copenhagen poliomyelitis epidemic in 1952, and the treatment of respiratory failure in the period before that time. I ended that paper by expressing the hope 'that it would perhaps stimulate further interest in the history of intensive therapy'.

Search for references

When I was asked to speak at this meeting I thought I might search the anaesthetic literature to find out whether my paper had in fact stimulated any further interest in the history of intensive therapy in this country. Using the Royal Society of Medicine Fellows on-line search facilities I searched MEDLINE and EMBASE from 1993, the date of my lecture in the RSM, to the present. I used 'critical care AND history', 'intensive care AND history' and 'intensive therapy AND history' as keywords.

I found 37 references. The first was one in French² describing the beginnings of réanimation in France. I found seven articles in one volume, volume 13, (1997) of the journal *Critical Care Clinics*. That volume, which is subtitled International Perspectives on Critical Care, is mostly about the state of critical care in various countries in 1997, but seven of the papers³⁻⁹ do contain short sections on the development of intensive care in those countries.

I found four papers about the development of intensive therapy nursing. One is by Doctors Gordon and Sherwood Jones¹⁰ from Whiston Hospital, in Merseyside. It is one of the few records of the development of a modern general intensive therapy unit. It describes the evolution of the Unit from a 4-bedded unit set up for a trial period in 1962, until 1983 by which time it had become an internationally respected clinical, training and research centre. The article emphasises the length of service of senior nurses in the Unit. The authors took pride in the fact that their nurses stayed with them on average 16.5 years. 12 nurses had served for 20 years. The other papers on intensive therapy nursing are one from Spain¹¹ and two from the United States.^{12,13} One of these is from Baltimore and it describes the evolution of paediatric intensive care from 'blue baby' nursing.

There are two papers about Bjorn Ibsen. One was written by Dick Atkinson¹⁴ and the other by John Zorab.¹⁵ There have been a series of at least 20 articles in German about the development of intensive care in Germany. I have cited only one reference.¹⁶ A paper was written to celebrate the silver anniversary of the Society of Critical Care Medicine in the United States.¹⁷ The last paper found in my search is a paper by Ibsen himself but it was a reproduction of a paper he wrote in 1966.¹⁸

Further references

So I had found 36 papers since 1993, but only three from this country, two of them about Ibsen and the other about a single Unit. I do not think I can claim to have stimulated any of them! I therefore decided to start researching the development of intensive therapy in this country in the early years after the Copenhagen epidemic in 1952. I have searched the *British Journal of Anaesthesia* and *Anaesthesia*, starting from 1953 and ending 10 years later in 1963. The words Intensive Care, Intensive Therapy, and Critical Care Medicine had not been invented. Ventilators were called Respirators, Intermittent Positive Pressure ventilation (IPPV) was called Intermittent Positive Pressure Respiration (IPPR). Papers on the management of long-term respiratory failure appeared under various titles according to the disease treated or perhaps the techniques employed. It would for these reasons be difficult to find key words to use in a search of electronic databases, so I searched the actual journals themselves, looking for articles which might be relevant to the evolution of intensive therapy. References in some articles in the anaesthetic journals led me to relevant articles in other journals.

I found 41 references relevant to the development of what would now be called intensive therapy in this country in the years 1953 - 1963. I was somewhat put down when after I had done all this the editor kindly sent me a reprint of Dr M I Palmer's paper to this Society in 1999.¹⁹ It was entitled 'Intensive Care Medicine; A brief history of development'. It seemed that Dr Palmer had said everything that I intended to say and that my search through the journals had been unnecessary, and worse; I would have nothing new to say to the History of Anaesthesia Society. But on re-reading Dr Palmer's paper I realised that it is an excellent source of information on several aspects of the evolution of intensive care. However, he did not really define the steps by which anaesthetists managed to become accepted as physicians in critical care in their own right, as opposed to technical assistants to physicians or surgeons, how they learned to treat diseases other than polio, or how they managed to progress from simply experts in the treatment of respiratory failure to become competent in the management of renal failure and cardiovascular failure. So I continued my search.

I found no titles relevant to intensive therapy in the anaesthetic journals of 1952 or 1953. Although I found 41 papers between 1954 and 1963 inclusive, in this lecture there will be only enough time to consider those from the journals up to 1957.

Respiratory failure

In 1954 there were two papers by Danish authors^{20, 21} describing the poliomyelitis epidemic in more detail. One was by Anderson and Ibsen and the other by Poul Astrup and his colleagues.

Mushin and his colleagues²² described modern anaesthetic respirators but there was no mention of their use in long term respiratory failure. Kilpatrick²³ described a manual respirator and cited the Copenhagen epidemic as the inspiration for his invention, so he obviously had long term ventilation in mind. An 'annotation'²⁴ in the *British Medical Journal* described the necessity for a respirator to be on hand in case of respiratory failure in a child with measles encephalitis.

References in papers in the *British Journal of Anaesthesia* led me to three articles in the *British Medical Journal* on the use of intermittent positive pressure respiration in respiratory failure due to acute respiratory infections:

Simpson²⁵ writing from Chase Farm Hospital described his management of 118 cases of acute respiratory infections in emphysema. It contained only four lines about artificial respiration: 'When I have used the tank or cuirass type of respirator I have found that the respirator cannot be set to the rhythm of the patient's functioning but depressed respiratory centre and that therefore it is of little assistance'.

An editorial²⁶ in the *British Medical Journal* said: 'In bronchitis and emphysema mechanical ventilation has not proved helpful'.

Westlake²⁷ wrote: 'In my own experience, the Paul-Bragg Pulsator, the Drinker-type tank respirator and Donald's positive pressure patient-cycled respirator have all proved ineffective in increasing the ventilation in severe respiratory failure'.

However, Wislicki²⁸ writing from Israel in the *British Journal of Anaesthesia* of the following year, (1955) concluded: 'I do not think assisted respiration has been given a fair chance'. She describes the inadequacies of the tank and Paul Bragg respirators, and continues: 'But one ought to persevere to find ways of tiding patients over a period of respiratory failure which might be only very short, until the antibiotics take effect and the acute infection passes... Simpson's cases had a mortality of almost 35%, Westlake's over 40% and every winter the death rate from respiratory diseases rises steeply in Britain, especially during fogs and smogs. To reduce it is a challenge to the physician and anaesthetist as great as the outbreak of bulbar respiratory paralysis was to the Danish poliomyelitis team'.

There were two papers in 1956 about treatment of tetanus. Galloway (a physician) and Wilson (an anaesthetist)²⁹ had treated 14 cases by tracheostomy with sedation by paraldehyde or a thiopentone drip but no relaxants or IPPR. Six of their patients died. Gusterson,³⁰ an anaesthetist in Worthing, reported one case in which he had maintained ventilation with nitrous oxide and oxygen for five days until the patient's death, using a Beaver respirator, ventilation being aided by curare. The importance of these papers is that anaesthetists were involved in the management of diseases other than poliomyelitis and at least one of them realised that long-term IPPR may be facilitated by relaxants.

Woolmer's paper

The most important paper in 1956 was by Ronald Woolmer,³¹ from Bristol. It holds the key to the slow development of long term ventilator treatment after 1952. I have already described the poor view taken of IPPR in respiratory failure due to emphysema. Patients with tetanus also did badly. Woolmer told his contemporaries why: Ibsen had shown that IPPR in patients with respiratory failure due to poliomyelitis, was relatively easy, because they were suffering from a flaccid paralysis and could not resist the ventilator. Patients with emphysema or tetanus were 'spastic', and very difficult to ventilate. Woolmer said that if such patients needed artificial ventilation, they should be made flaccid, with curare.

This insight by Woolmer greatly expanded the range of conditions in which respiration could be supported, and in which the participation of anaesthetists was essential. It was also a step

forward in the progress of anaesthetists towards their being given responsibility for management of patients in respiratory failure rather than their being used simply as respiratory technicians. The management of patients in respiratory failure is described in considerable detail, including the choice of negative or positive pressure respirators, feeding through a gastrostomy and humidification. I remember this paper as essential reading for the FFA examination. Woolmer described conditions in which respiratory support may be urgently needed: poliomyelitis, tetanus, narcotic or carbon monoxide poisoning, poisoning by anticholinesterases (eg. from insecticides), asphyxia neonatorum, partial drowning, and rarities such as acute polyneuritis and Landry's paralysis.

I found several other papers in 1956. One by Inkster and Rees³² was about a method of determining end-tidal CO₂. Esplen,³³ a Liverpool anaesthetist, described the Fazakerley respirator, and there was a paper³⁴ on tetanus treated by IPPR aided by suxamethonium.

References in the anaesthetic journals led me to two papers^{35, 36} in the surgical literature on the management of crushed chest injuries. In one of them the idea of splinting the chest by positive pressure ventilation, achieving apnoea by hyperventilation was introduced by Avory and Morch.³⁵ They described a patient, a 51-year-old man, who was 'slowly rolled, like pie-dough, into an 8-inch space between a diesel locomotive and a steel furnace'. He was admitted moribund, in deep shock with bilateral fractures of all ribs, costochondral separations, bilateral tension haemopneumothoraces, fractures of the sternum, clavicles and pelvis, crush injuries of the liver and genito-urinary tract, paralytic ileus and gastric dilatation. He was disconnected from the respirator after 51 days and at the time of the meeting at which his case was presented, he had returned to work. The authors mention that positive pressure respiration using a face mask had been used during World War II. In the following year (1957) a paper on IPPR in crushed chest appeared in the anaesthetic literature: Boyle and his colleagues³⁷ reported in *Anaesthesia* two cases of crush injury of the chest. One was treated with a patient-triggered Newcastle respirator 'with benefit' although he died after two days probably from his head injuries.

An Intensive Care Ward

The *British Journal of Anaesthesia* of 1957 contained a paper by Churchill-Davidson and Richardson³⁸ on the therapeutic use of d-tubocurarine in myasthenic crisis. Jackson Rees's group³⁹ had a paper on salicylate intoxication treated with IPPR. Cecil Gray⁴⁰ reviewed Langton Hewer and Lee's *Recent Advances in Anaesthesia and Analgesia* and expressed surprise at the absence of any mention of patients in respiratory inadequacy or coma.

However, a paper by Clive Jolly and J Alfred Lee⁴¹ in *Anaesthesia* (1957) was in my view a quantum leap forward. The paper was called 'Post-operative observation ward' (POW). The authors started with a scathing description of the contrast between the close observation of the patient in the operating theatre and the unsatisfactory care provided later in the general surgical ward. A post-operative observation ward was opened in the General Hospital at Southend. The article reviewed the experience gained and the lessons learned during the first year of its operation.

It is impossible to do justice to this paper in a short time, but it is important in the context of the history of intensive care because this post-operative observation ward was not just a post-operative observation ward. In a section entitled 'Additional cases nursed in the POW' Jolly and Lee wrote:

'Cases that are not truly post-operative have been admitted.... Examples are severe road accidents, such as crushed chests, comatose head injuries and grave internal haemorrhages. Severe examples of carbon monoxide poisoning, barbiturate poisoning and tetanus could also be nursed in this ward.'

This was, I think, the first description of an intensive care ward in this country. The supervision of the patients was shared between surgeons and anaesthetists, but the emphasis was on the continuous presence of skilled nursing staff. In 1957, 5 years after the Copenhagen epidemic, we had in this country a Unit where anaesthetists and specially-skilled nurses could look after critically ill patients who were not necessarily 'post-operative'.

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THE FOUNDERS OF THE FIRST SOCIETY

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Introduction

The Society of Anaesthetists was the first anaesthetic society to be formed anywhere in the world, 47 years after Morton's demonstration of ether narcosis in Boston, Massachusetts.¹ Many well-known figures, such as Frederic Hewitt and Dudley Buxton, had proposed that medical students should be given proper instruction in administering anaesthetics, that resident posts should be made available in hospitals, and that the examining bodies should be concerned with the subject; but the first person to publish these views was Frederick Silk.

Frederick Silk

In a paper to the Thames Valley Branch of the British Medical Association, which was published in the *Lancet* in May 1892,² he proposed that students should have to give evidence on qualification of having attended lectures and demonstrations, of having administered a certain number of anaesthetics, and of having to keep records as anaesthetic clerks, as well as the need for examination in the subject and for resident posts in hospitals.

John Frederick William Silk was born in Gravesend, Kent on 24th January 1858, a few months before John Snow died. He was educated at Cranbrook School, won a scholarship to King's College and then King's College Hospital, London. He qualified LSA in 1879, MRCS in 1880, MB in 1881 and obtained an MD in 1884. After two house jobs at King's he went to Leeds as house physician, where he learnt to use Clover's inhaler, to which he was always afterwards very attached. He returned to London as a general practitioner, but later became Anaesthetist to the Great Northern Central Hospital (now the Royal Northern), and after that to the Hospital for Epilepsy (now the National Hospital for Nervous Diseases, Queen Square). In 1888 he produced a textbook, *A Manual of Nitrous Oxide Anaesthesia* in which he stressed, with particular reference to dental anaesthesia, that the anaesthetic must receive the attention of one individual and that that one must not be performing the operation.

It was Silk who called a meeting of well-known anaesthetists to his house at 29 Weymouth Street, only a few hundred metres from the Royal Society of Medicine, at 8.30 on the evening of 15th June 1893.⁴ In his own words:⁵

'For some years preceding that date (1893) the subject of anaesthetics had occupied a very prominent position in the professional controversies of the period, and its importance as a branch of medical education and special practice was becoming more generally recognised. It seemed to me, therefore, that the time had arrived when an attempt should be made to form a special Society of Anaesthetists. I accordingly placed myself in communication with the leaders of the profession in this branch, by whom the suggestion was received with much favour, both in London and the Provinces.'

First Provisional Meeting

Those attending were: Woodhouse Braine (Charing Cross), G E Norton (Middlesex), J P Stallard (Manchester) and Silk himself. Frederic Hewitt (The London and later St George's), Dudley Buxton (University College Hospital), Henry Davis (St Mary's) and Alexander Wilson (Manchester) sent their regrets. Even at this first provisional meeting there was a representative from Manchester. Woodhouse Braine was in the chair and Silk was Provisional Honorary Secretary. A letter was received from Dr W Fingland of 35 Rodney St, Liverpool, expressing surprise that there was no representative from Liverpool and stating: 'I am the first pure anaesthetist that Liverpool has so far encouraged'. He added later: 'I am a pure anaesthetist holding an appointment as such at the Royal Infirmary'. No doubt this purity of Liverpool anaesthetists persists to this day.

The provisional rules of the Society, 33 in number, were drawn up at this meeting. They were similar to those applying to many anaesthetic bodies today as regards objectives and qualification of members. There was a council consisting of a President holding office for one year, renewable for a further year; a Treasurer elected for one year, subject to re-election, a Secretary re-electable each year, and rules about the order of business etc. The first rule stated that the society should be called the Society of Anaesthetists, and the second that the objectives of the society shall be as follows:

1. To encourage the study of Anaesthetics.
2. To promote and encourage friendly relations among the members.

The fourth rule stated that 'duly qualified medical men, holding or having held office at a recognised Public Institution (later 'or in bona fide practice as anaesthetists' was added) shall be eligible for nomination as Ordinary Members', and the Provisional Secretary was told to inform three women who had applied that the committee had no power to admit them. Distinguished anaesthetists might be elected to Honorary Membership.

Lady Members

However, at the second provisional meeting held on 5th October 1893 these rules were modified in several ways. One of the most important was that in rule 4 'Duly qualified medical men' was altered to 'Duly qualified medical practitioners', so that justice was done. Silk later wrote that the Society was possibly 'the first to admit ladies to the fullest privilege of membership. Some criticism was evoked, but the course taken has been fully justified, and ladies have contributed in no slight measure to the success of our meetings'.

The first lady to be elected was Mrs Frances May Dickinson Berry, anaesthetist to the Alexandra Hospital for Children with Diseases of the Hip, at the north-west corner of Queen Square; this no longer exists. She was married to the surgeon, James (later Sir James) Barry, who became President of the Royal Society of Medicine in 1926-1928. Mrs Berry qualified MB in 1889 and gained an MD in 1892. She affected a rather mannish style of dress and was undoubtedly a character. She took her husband cycling all over Central Europe and North Africa, and she was a keen mountaineer and swimmer. She and her husband had a distinguished career in Serbia during the Balkan Wars in 1912-1913, and she later established scholarships for Yugoslav students who wished to qualify in medicine in London. She later became President of the Medical Women's Federation. She died in 1934.^{6,7}

The other two women were Mrs Caroline Keith and Miss Evaline Cargill, both of the New Hospital for Women (later the Elizabeth Garrett Anderson) in Euston Road. I have not been able to discover much about Miss Cargill, beyond the fact that she acquired an MD in Brussels in 1891, having qualified with a conjoint diploma in Edinburgh and Glasgow two years previously.

Caroline Keith, whose maiden name was Michaux-Bellaire, was French, from Alsace. It was said that when she met her future husband, who was a reticent Scottish surgeon in the Indian Army, she spoke no English and he spoke no French. It must have been an interesting courtship. When he was posted up-country in India, he entreated her to study medicine while he was away. She became a student at the London School of Medicine for Women (now the Royal Free Hospital), and later became a good anaesthetist. She gave up her career when she had saved up enough money to bear her share of the housekeeping, and concentrated on the home. She died in 1925.⁸

Special General Meeting

At the second provisional meeting it was also resolved that there should be two secretaries rather than just one, a rule which is still extant today. A special general meeting was held on 15th October 1893 when the rules of the new society were approved. This meeting was held at Limmer's hotel (now Sotheby's gallery) at the corner of Conduit Street and St George Street, Hanover Square. It was followed by a very successful dinner, after which Dudley Buxton proposed the toast 'Success to the Society'.⁹ The subsequent meetings of the Society were held in a room hired from the Royal Medical and Chirurgical Society at its house at 20 Hanover Square. The entrance fee was ten shillings and sixpence (or 52½p in today's money) and the dinner after the meetings was the same price. The annual fee was £5 guineas (£5.25 today). The meetings were held on the third Thursday of the month from November to March at 8.30 pm (later changed to the first Friday), and the dinners were held at Limmer's hotel.

First Ordinary Meeting

The first ordinary meeting of the Society was held on 18th November 1893, with F Woodhouse Braine as President. On this occasion, a paper was given by Dr George Oliver of Harrogate on 'Observations on the size of the radial artery under ether, chloroform and nitrous oxide anaesthesia'.¹

Woodhouse Braine, though little known today, was said to have had a practice rivalling that of Joseph Clover.^{10,11} He does not appear to have produced many papers; he is described in his obituary as 'more a man of action than a writer'. He is credited with having helped to introduce nitrous oxide anaesthesia into England, and was almost certainly present when T W Evans, the American dentist working in Paris, paid his short visit to London in 1868 to demonstrate his apparatus.

It is worth mentioning that of the 40 original members of the Society seven came from the provinces (Brighton, Edinburgh, Manchester, Liverpool and Tunbridge Wells), so that the term 'London Society of Anaesthetists', which was sometimes used in other publications, was a misnomer from its beginning. Indeed, doctors who had anaesthetic appointments in

Canada, Australia, India and New Zealand (then in the British Empire) were elected to membership in the next few years.

Subjects

Of the various subjects discussed over the next fourteen years of the Society's existence, one or two stand out as being of particular interest.

1. In 1894, an offer to the Society to attend a meeting of the Laryngological Society of London on 1st April was accepted. This must be the first combined with another specialty to be recorded. The subject was 'Anaesthesia for Tonsillectomy'.¹²
2. In the same year Lt-Col Edward Lawrie of the Afzul Gunz Hospital in Hyderabad in India was elected a member. He was present at the fairly frequent meetings when the safety of chloroform anaesthesia was discussed, and was obstinately of the opinion that it was perfectly safe if properly administered, and that respiratory failure always occurred before cardiac arrest. On several occasions such well-known persons as Sharpey-Schafer (later Sir Edward Sharpey-Schafer), Augustus Waller, Leonard Hill (later Sir Leonard Hill) and Charles Martin of Melbourne, Australia were present. They became members and had been involved in the two Hyderabad Commissions set up in 1888-1889, which failed to establish the safety of chloroform as a general anaesthetic.
3. In November 1896 a deputation of the President, then Frederick Silk, and the Secretary, Carter Braine (son of Woodhouse Braine) asked Sir Joseph Lister to deliver an oration on the occasion of the jubilee of the introduction of chloroform anaesthesia, at a date convenient to himself. He 'regretted that he could not accede to the wish of the Committee', stating that 'he failed to see why a chloroform commemoration was necessary, as it was quite secondary to the discovery of anaesthesia', presumably referring to the introduction of nitrous oxide or ether. This was surprising from someone who had begun his career in Edinburgh, where chloroform was preferred as an anaesthetic agent. So Dudley Buxton, the next President of the Society, gave the oration.
4. In June 1901 a resolution was carried empowering the Council to direct the attention of the General Medical Council (GMC) to the desirability of including in the curriculum of medical education the subject of anaesthesia, and gave reasons for their request. Back came the answer in December:

'The Committee (of the GMC) fully appreciates the importance of proper teaching in the subject of Anaesthetics; but they are of the opinion that it is not expedient that it should be compulsorily included as a separate subject of the curriculum'.

It was to be another eight years before the GMC ruled that students must receive instruction in anaesthetics.

Incidentally, for the first four years of its existence, no proceedings of the Society's meetings were produced. Accounts of the meetings were published in the *Lancet* or the *British Medical Journal*. The *Transactions of the Society of Anaesthetists* was first published in 1897, and consists of nine volumes up to 1908. It is worth noting that all the papers and discussions were about general anaesthesia until 1908, when one paper was read on spinal analgesia.¹³

By that time the membership had grown to 103, and 18 of the original members were still alive. Several overseas members had joined; Dr Jean Braun of Geneva, Dr Mary Rupert of the Women's Hospital, Philadelphia, as well as Dr Samuel Johnson of the Toronto General Hospital.

Amalgamation of London Medical Societies

Meanwhile, at the 98th meeting of the Council on 27th September 1905 the Treasurer, Dr Probyn-Williams, reported attending as a representative of the Society a meeting held on 4th May to consider amalgamation of all the London Medical Societies. The President was Dr Edgar Willett, the Secretaries were Dr Crouch and Dr Blumfield, and the Council members Dr Carter Braine and Mrs Dickinson Berry. There was some delay because at first it appeared that the conditions of eligibility of women for the Fellowship were unacceptable to the newly formed Royal Society of Medicine (RSM). It is reported that Council stated: 'During the past session the Society after much consideration decided not to join the present scheme for amalgamating with the Medical Societies of London'; but this was eventually overcome. And in the Council meeting Dr Blumfield gave notice of intention to propose that the Society be amalgamated with RSM.

At the 113th meeting of Council on 14th April 1908 a letter was read from the Long Island Society of Anaesthetists in the USA, enquiring about the conditions of membership and about corresponding membership of the new Society. The Senior Secretary was instructed to reply that the matter would have to remain temporarily in abeyance. At this meeting the President, Dr Probyn-Williams, announced in a letter sent to all the members that an extraordinary meeting would be held on 28th April.

Last Meeting

The last ordinary meeting of the Society was held on 6th March 1908, when Mr Percy Dean FRCS of the London Hospital read a paper on spinal anaesthesia.¹³ At the annual meeting held afterwards, on the motion of Dr Blumfield, it was agreed to amalgamate with the RSM. This was approved at the extraordinary meeting in April, and on 25th May Dr Silk, who was Treasurer at the time, handed over to the new RSM the assets of the Society which consisted of not quite £113. In June 1908 the first Society of Anaesthetists finally ceased to exist.

Acknowledgements

I am indebted to Dr Marguerite Zimmer of Strasbourg for information about Caroline Keith's family, and to Dr Edith Gilchrist, Archivist at the Royal Free Hospital, for information about the first three lady members of the Society of Anaesthetists.

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IT'S NOT OUR BICENTENARY – YET!

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Introduction

The Royal Society of Medicine (RSM), founded in 1905, claims this year as its bicentenary because of its direct descent from the Royal Medical and Chirurgical Society (RMCS), founded in 1805. Many of the Sections therefore are celebrating their centenaries this year; the Anaesthetic Section is not, for we did not join the RSM until 1908. We thus have three years before we celebrate our first hundred years, and much further before we reach the bicentenary of the start of our specialty.

To put these three dates into context, I sought some episodes of anaesthetic significance from each year. In the year the RMCS was founded Serturmer isolated morphine from opium; in the year it became the RSM Einhorn discovered novocaine; in the year our Section was formed Ombredanne described his ether inhaler and Bier introduced intravenous procaine analgesia.

The Society of Anaesthetists and the RMCS

When the Society of Anaesthetists was founded in 1893 it was the first in the world. The RMCS had existed for over 90 years and numbered several anaesthetists amongst its members including John Snow, Joseph Clover, Frederic Hewitt and Dudley Buxton. When it looked for a suitable place to meet, it found it in the house belonging to the RMCS; 20 Hanover Square just south of Oxford Street, a house that remained in the possession of the RSM until 2001 when it was sold to finance the refurbishment of the RSM and the repurchase of Chandos House.

Hanover Square was a handsome Georgian square, built at the time when the aristocracy and smart Londoners were moving westwards to escape the over-crowded and polluted City. It was built from 1717 onwards and number 20 is one of only two original houses remaining. The RMCS had already had several homes, for it was continually outgrowing the space it needed for the expanding book collection that was to become today's RSM library. They had no capital to buy a large house, but they reckoned without the genius of their secretary/librarian, the redoubtable John MacAlister. It was he who masterminded their purchase in Hanover Square, suggesting that as the Society was impecunious it should follow the principle of 'the unprovided widow who takes a larger house and lives on the lodgers'. MacAlister found a larger house, convinced the officers of the Society that his plan was viable, and bought it in 1890 for £23,000. (The RSM sold it in 2001 for £7.5 million). MacAlister's 'widows principle' worked, and soon the Society was indeed living off its lodgers, for there was a great demand for rented rooms from the numerous new specialist medical societies that were emerging at this time. MacAlister welcomed anyone who would pay a good rent and fitted in with his idea of prestigious tenants. The Society of Anaesthetists was one of these. For ten guineas (£10.50p) a year it was entitled to hold ten meetings, to have its name recorded on a board in the entrance hall and to use it as a postal address.

From RMCS to RSM

Within ten years of the foundation of the Society of Anaesthetists big changes occurred within the RCMS. Its officers had been trying for some 40 years to convince the independent specialist societies of the advantages of merging their resources to form a single academy. They did not succeed until 1905 when, catalysed by William Osler and MacAlister, fifteen societies agreed to amalgamate and change their name to the Royal Society of Medicine.

The anaesthetists were not amongst this group. The Minutes of the Society in 1905 record that Dr Blumfield, the Honorary Secretary, put forward suggestions for the conditions under which the Society of Anaesthetists would be prepared to join. These included maintaining autonomy in their affairs and full membership rights for all their members. By this time about 10% of the members were women and the RSM intended to grant only limited associate membership to women doctors. A vote of the anaesthetists was taken and of 56 voting, Forty-five were in favour of amalgamation provided all their conditions were met. They stuck to their guns and did not join until 1908, when the RSM relented and agreed to grant full fellowship to women. The balance of the Society's funds was then handed over to the RSM, a total of £112/19/9, or nearly £6000 in today's values. It should be noted that in spite of its insistence on rights for women, it was 48 years before it elected its first woman President, Dr Katherine Lloyd-Williams of the Royal Free Hospital, in 1956.

The Section of Anaesthetics

In the introduction to Young's history of the Section¹ Dr Lucien Morris of Seattle, a distinguished Honorary Member of the Section, describes it as 'the oldest continuously functioning organisation of physicians actively interested in the practice of anaesthesia', a proud and responsible role.

The first meeting of the new Section of Anaesthetics was on 4th November 1908 at 8.30pm at 20 Hanover Square. In the chair was the President Dr Richard Gill. Eighteen fellows and members heard Gill talk on 'Chloroform action'. The RSM and its Sections continued to meet in Hanover Square, but it soon became obvious that larger purpose-built premises were needed. The present site at 1 Wimpole Street was acquired, the RSM built the house occupied today, and moved in in 1912.

It is important to note that until the 1950s the RSM Section was the only forum for anaesthetists to meet regularly to discuss problems and advances. From 1912 the British Medical Association's Anaesthetic Section had held meetings, but only once a year. Strangely, although the Association of Anaesthetists of Great Britain and Ireland was formed in 1932 it held no scientific meetings until 1948,² the same year that the Faculty was established within the Royal College of Surgeons and started to hold meetings and run courses. For 30 years the RSM Section held sway as the only venue for monthly Scientific Meetings, so not surprisingly it attracted audiences and speakers from all over the country and from overseas.

The life of the Section covers the period when anaesthesia progressed at a remarkably fast rate from being a skilled craft to what it is today, one of the most scientifically based fields in medicine. How do the Proceedings of the Section reflect this progress? Did the Section lead the field, follow the field, or simply run in parallel with advances in anaesthesia? I suggest it

did all three in turn. At first it was undoubtedly in the lead, then its role gradually changed to running in parallel; and now today it is the follower. Looking at the papers presented at meetings we can clearly see these several phases. They conveniently fall into decades, and the examples I shall pick out refer only to those advances that were reported to the meetings of the Section.

From foundation to the end of the First World War

In the early days most meetings consisted of case presentations and discussion of problems and complications. With the largely uncontrolled anaesthetic techniques then known there were plenty of the latter. Investigation into deaths featured prominently. Dental anaesthesia took up a surprising amount of time, reflecting the large amount of dental chair anaesthesia carried out. This was mainly a British practice, virtually unknown on the continent of Europe and, in spite of Morton, not much used in North America. In 1914 tracheal intubation was first mooted by Boyle, Shipway and others.

The 1920's

This decade saw tracheal intubation firmly established, developing from a skill achieved by a few practitioners to the stock-in-trade of all. This was a direct result of the advocacy of Dr Ivan Magill (later Sir Ivan), who was to become such an important figure at the RSM during his long life. He often addressed the Section, and happily we still possess precious films of him demonstrating his technique. He was the second to be awarded the Hickman Medal, and the first anaesthetist to be elected an Honorary Fellow of the RSM. He continued to attend almost every Section meeting until shortly before his death in 1986 aged 98.

One week in 1926 must have been very exciting. The Section met twice at 10am. On the first occasion it was addressed by an eminent basic scientist, the physiologist J S Haldane, who lectured on 'Some bearings of the physiology of respiration on the administration of anaesthetics'. This was followed two days later by the visit of several distinguished American anaesthetists; Francis McMechan, founder of the American Association of Anaesthetists, who became the first Honorary Member of the Section and whose name incidentally was erroneously recorded in the minutes as McMahon; Wesley Bourne, the recipient of the first Hickman Medal, and Elmer McKesson, famous for his anaesthetic machine, who spoke on his alarming technique of 'secondary saturation'. He provided conditions for abdominal surgery using nitrous oxide and oxygen only; his patients were given 100% N₂O until they were grossly cyanosed and convulsing and were then flooded with oxygen just before cardio-respiratory arrest occurred.

The 1930's

Magill advocated setting up a Diploma in Anaesthetics, and because the RSM could not under its constitution conduct examinations, this led directly to the foundation of the Association of Anaesthetists of Great Britain and Ireland, who in turn put the matter in the hands of the Conjoint Board of the Royal Colleges of Physicians and Surgeons.

Another American, Ralph Waters, came to describe his CO₂ absorption technique. This was followed by Michael Nosworthy's introduction of controlled ventilation. He used a physiological mechanism to abolish spontaneous breathing, starting with morphine

premedication and then using hyperventilation with cyclopropane, a respiratory depressant, through an absorber to lower the CO_2 tension to levels that resulted in apnoea. He thus opened up new fields for chest surgery without having recourse to deep anaesthesia, and this was in the days before curare came into use. In 1934 R J Minnitt of Liverpool introduced his apparatus for analgesia for women in labour.

The 1940's and the Second World War

Wars often result in surgical advances. This decade saw the start of the era of antibiotics, and intravenous therapy and blood transfusion became practical.

The immediate post-war years were a brilliant period for anaesthesia. Curare came into clinical use, probably the most important development since the introduction of anaesthesia itself a century earlier. How fortunate we were to have Cecil Gray of Liverpool to see so clearly its potential. On 1st March 1946 he delivered his classic paper 'A Milestone in Anaesthesia' and showed how neuromuscular block offered us a new concept, one that would change our whole way of thinking about the anaesthetic process. This epoch-making meeting attracted the second largest audience the Section has ever recorded (203), and the President decreed that the meeting should be prolonged indefinitely. Those who think anaesthesia is impossible without neuromuscular blocking agents may be reminded that some of us are still around who remember the pre-curare days and some of the struggles we had.

Two years later Professor Edgar Pask of Newcastle reported studies on artificial respiration, and with this came the realisation that we had not nearly enough knowledge of physiology, physics and ventilators to cope safely with the apnoeic paralysed patient. Anaesthetists turned to the laboratory to study basic sciences, and many of these early studies were reported to the Section.

New concepts did not stop here, for in 1949 John Gillies of Edinburgh told us how he was using high spinal anaesthesia for the surgical treatment of hypertension. This heralded its use not merely to produce analgesia, but also to lower the blood pressure deliberately as a way of assisting the surgeons to perform better and more accurate operations. Gillies propounded the philosophy of 'physiological trespass', suggesting that we should start thinking not just about maintaining normal physiology, but go further and manipulate the body systems both for protection of the patient and to help the surgeon. Gray had shown how to control pulmonary ventilation, now Gillies had shown how to control the peripheral circulation. Later Prys-Roberts and Foex of Oxford went on to work out how we could control the heart and the central circulation by autonomic blockade, and soon hypothermia was being used to reduce cardiac and metabolic activity.

The 1950's and 1960's

This productive period continued, and John Nunn and his Leeds team were amongst the pioneers in applying basic science to anaesthesia. It was an exciting time to practise, for almost every day brought something new; ethics committees were unheard of at this time and anyone could try out something new, guided only by their own ethical standards. Manufacturers too were busy producing designer drugs such as halothane, though later there was a problem with hepatotoxicity and there was some turbulence at a meeting in 1964 with Professor Sheila Sherlock. These arguments lasted until the 1980s, but the enigma was never

really solved because by this time new inhalation agents had been produced to replace halothane.

Anaesthetists assiduously took up patient monitoring and were instrumental in pressing the RSM to set up its important Section of Clinical Measurement; we were too amongst the first to use on-line computing in medical practice. It is worth noting that induced hypotension, an exacting technique, was used safely before elaborate monitoring was practiced. Gillies used hypotensive spinals, and Enderby and Armstrong Davidson administered ganglion-blocking agents deliberately to lower systolic blood pressure to below 60mmHg, using no more monitoring than a blood pressure cuff, a mercury manometer and a close watch on the capillary refill time. They also used an additional safety factor now long out of fashion, namely maintaining spontaneous breathing as a good indicator of cerebral perfusion.

In 1956 the Registrar's Prize was inaugurated. One of the winners, David Benazon, described the experimental work at the Westminster Hospital that resulted in the daring use of profound hypothermia for cardiac surgery. It must be unusual for a registrar's essay to be promptly reproduced in the *Lancet*.

The epidemic of poliomyelitis in Denmark showed that prolonged intermittent positive pressure ventilation in conscious patients was feasible. We heard about this from Pask and from Crampton-Smith and Spalding in Oxford, thus heralding the important movement out of the operating theatre into the intensive care unit.

In 1954 the highest attendance ever recorded at a Section meeting was for a rather surprising topic; the French were introducing what they termed 'artificial hibernation' using very large doses of phenothiazines. Professor J H Burn, the distinguished pharmacologist, attracted a record audience of 257 to his lecture on the pharmacology of phenothiazines.

One of the papers that has seldom got the credit it deserves was that by Edmund Riding of Liverpool on post-operative vomiting. There have been hundreds of papers on the subject since but, although vast quantities of expensive drugs have been sold, few have added much to the points of principle he made in 1960.

The 1970's

By this time it might have been asked 'could we keep up this pace?' The answer is no, we could not, but perhaps we did not need to. The 1970s brought consolidation of the great strides made since the end of the war, and was a period more of refining existing techniques than developing new ones. Anaesthesia had enabled surgery to expand; it had been made safe for the patient, so that now we could start making it more comfortable. In fact it had improved so much that day case surgery was by now feasible and being increasingly advocated. One topic disappeared about this time. Investigations into deaths were now recorded elsewhere following the setting up of nationally based studies; first the Confidential Enquiry into Maternal Deaths, and later the Confidential Enquiry into Postoperative Deaths (CEPOD).

The 1980's

Two new topics appeared. The first was the occasional appearance of awareness under anaesthesia, and it is surprising that it was not mentioned in the Section's records until forty years after curare was first used, for it still remains a problem. The second was the question of whether anaesthesia is unhealthy for the anaesthetist. The possible health hazard of long-term inhalation of low concentrations of anaesthetic agents was easily solved; more serious is the question of whether the occupational stress of anaesthetic practice contributes to high mental illness and suicide rates, something that is a matter of ongoing concern.

The 1990s

By this time the perennial topic of dental anaesthesia had largely vanished from the Section's papers following the Poswillo report, which brought to an end general anaesthesia in isolated dental surgeries. Dental sedation still remains a topic for discussion.

A new activity, thanks to easier travel, was that overseas meetings were started. The first was held in Dublin in 1990, of which there is no record except that it took place. This was followed two years later by one in Mainz in Germany. These are now a regular and popular feature.

Regional analgesia

Surprisingly little was reported about regional analgesia for many years. Peter Dinnick, when summarising the influence of the first Society of Anaesthetists, wrote: 'only by its failure to recognise European developments in regional analgesia could the Society be said to have lagged behind the forefront of current trends'. In this it merely reflected British practice. From the end of the 19th century surgeons both in continental Europe and North America made extensive use of regional block for surgery, but in Britain it was limited to little more than modest use of spinal analgesia. Perhaps the relative safety and efficiency of general anaesthesia at which the British excelled caused it to languish, though the much publicised Woolley and Roe case of permanent paralysis after spinal analgesia certainly set it back. A small number of enthusiasts such as Etherington Wilson, Massey Dawkins and Alfred Lee kept it going and spoke at Section meetings, but papers were few until the resurgence of interest in the 1980s brought it to the position it occupies today.

The Proceedings of the Section

The *Proceedings of the Royal Society of Medicine* were published from 1908 to 1977. The majority of papers from the Section meetings were published in these *Proceedings*. Unsurprisingly they varied from the epoch-making to the mundane, but on the whole they faithfully record the progress of anaesthesia. Sadly this is no longer the case. In 1978 the *Proceedings* were discontinued and became the *Journal of the Royal Society of Medicine*. Partly this was for the practical reason that there were far too many Sections to include all their papers, but there was at first a very obvious bias against publishing any at all; those that were reproduced were relegated to a back section labelled 'Supplement'. But what an appalling loss if, for example, Magill on endotracheal intubation, Gray on the potential of neuromuscular block, Gillies on physiological trespass, or Nosworthy on controlled

ventilation had not been recorded in full for posterity. I suggest that today's *Journal* rarely equals and seldom surpasses these.

Was the Section therefore a leader or a follower? Surely it evolved from one to the other, for the type of meeting has changed. The RSM is no longer the forum for ground-breaking advances to be announced; these are now communicated to research groups or specialist meetings. RSM meetings are now educational events, following and up-dating rather than leading. They are none the worse for that, for it is what is needed today with the demand for continuing education, professional development and life-long learning. It is good that we have evolved, for history shows that the institutions that survive are those that change. Our Section changed, survived and thrives.

Traditions

Some things have not changed. Meetings are held monthly and the meeting day, the first Friday of the month, dates from the very first meeting held in Hanover Square on 4th November 1908. The Proceedings are still recorded, though now in summary form rather than verbatim. Furthermore, we can trace the development of anaesthetic institutions from the first Society of Anaesthetists formed in 1893, through the Section of Anaesthetics dating from 1908 and renamed the Section of Anaesthesia in 1995. On the way it helped to give birth to the Association of Anaesthetists in 1932, pointed towards the Diploma in 1935, the Faculty in 1948 and finally to the Royal College in 1991.

This year we celebrate 200 years of the Royal Society of Medicine and look forward to our own Section's centenary in 2008.

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Jilly Cooper, *Appassionata*, BCA 1996

Aware that they had a 'very important patient', Intensive Care was already all stations go. Within seconds of his arrival, to the accompaniment of bulbs and flashing lights, a lifeless, unconscious Marcus had been laid on a bed, and given an injection to paralyse him totally. This was so that he couldn't resist the transparent tube which had been shoved down his throat, and which was pumping air and oxygen from a huge black box into his lungs. 'Christ', muttered the anaesthetist, glancing at the box to judge the extent of resistance in Marcus's lungs, 'he's up to eighty'. Then catching a look of terror in Marcus's staring eyes, the anaesthetist put on a hearty voice: 'It's all right, lad, we've had to paralyse you, only temporarily, to keep the tube down your throat. This is to sedate you, so you don't fight against it'. And he plunged another injection into Marcus's arm. 'Don't fret yourself, we'll soon have you breathing on your own'.

ABSTRACT**HENRY HILL HICKMAN - 1800 -1830**

Dr Adrian Padfield

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Hickman was described as the '*Rupert Brooke of Anaesthesia*' by E Ashworth Underwood, Director of the Wellcome Historical Medical Museum in 1946.¹ What follows is derived from the published and unpublished work of the late Denis Smith. Members of the Council of the History of Anaesthesia Society have edited the voluminous papers left by Denis. A book will be published and distributed to all delegates at the 6th International Symposium on the History of Anaesthesia in Cambridge, September 14-18.

Pioneer of Anaesthesia

Hickman, one of Cartwright's '*English Pioneers of Anaesthesia*',² was born 27th January 1800 in Lady Halton near Ludlow. Not much is known of his education. His notebook of 1816-18 has survived with extracts from text-books, an attendance record for two weeks in January 1818 at a London anatomy school and comments by local medical practitioners; the most frequent names are Jukes and Watson. Probably he was apprenticed to these two surgeons, who practised in Stourport on Severn. From 1819 he inserts 'Hill' randomly after Henry but it was not a baptismal name. He went to Edinburgh and matriculated in November 1819 but did not graduate. In May 1820 he went to London, passed MRCS then set up in practice in Ludlow, advertising for an apprentice in February 1821. On 21st June 1821 Hickman married Eliza, daughter of Benjamin Gardner; they had one son and three daughters. In May 1824, he auctioned his furniture, bedding, &c and nearly 200 specimens of stuffed birds and animals and moved to Shifnal, near Telford.

Suspended animation

In February 1824, before leaving Ludlow, Hickman wrote to T A Knight FRS who lived at Downton Castle, west of Ludlow, suggesting the use of 'suspended animation to tranquillise fear and relieve suffering during surgical operations'. He reported standard surgical procedures on animals, made insensible by denying them fresh air or by administering carbon dioxide, without evidence of pain and with full recovery. In August 1824 Hickman produced a pamphlet, from Shifnal, very similar to his letter to Knight. Its text was also reproduced as a letter in the *Shrewsbury Chronicle* but did not seem to attract much attention. The *Gentlemen's Magazine* of January - June 1825 p628 referred to the letter unenthusiastically and the *Lancet* responded in 1826 with a scathing letter, under the heading 'Surgical Humbug', signed 'Antiquack'.³

Appeal to the King of France

Hickman left Shifnal in April 1828 and went to Paris at least until November. There he appealed to Charles X, King of France, for the cooperation of the King's medical schools with his experiments on insensibility produced by 'introduction of certain gases into the lungs' but to no avail. He returned to England and set up practice in Tenbury Wells a few

miles east of Ludlow. He died at Tenbury Wells on 2nd April 1830 and was buried three days later in the parish church of Bromfield, where he had been baptised.

One hundred years later under the aegis of the Section of Anaesthetics, Royal Society of Medicine but initiated by the Wellcome Foundation,⁴ an exhibition was held in London on 2nd April, and there was a memorial service at St Mary's, Bromfield on 5th April. An appeal raised money for the Henry Hill Hickman Memorial Fund, used to design and provide a medal. Awarded triennially by the Council of the RSM, on the recommendation of the Council of the Section of Anaesthesia for 'original work of outstanding merit in Anaesthesia', there have been twenty-three medallists since 1935.

References

1. Underwood EA. Before and after Morton. *British Medical Journal* 1946; ii:525.
2. Cartwright FF. *The English Pioneers of Anaesthesia: Beddoes, Davy, and Hickman*. Bristol: John Wright & Sons, 1952.
3. *Lancet* 1826;i:646.
4. *Souvenir: Henry Hill Hickman centenary exhibition, 1830-1930*, Wellcome Historical Medical Museum, 1930.

Abbreviated Chronology

1800 - 27th January	Hickman born at Lady Halton near Bromfield.
1816-18	Probably apprenticed to Jukes & Watson in Stourport.
1818 - 19th -31st January	Attended Brookes' Anatomy Course; London.
1819 - 1st November.	Matriculated Edinburgh, No 269.
- 19th November.	Signed laws of Royal Medical Society
1819-1820	Student at Edinburgh University for 6 months.
1820 - 5th May.	Obtained Membership Diploma of the Royal College of Surgeons, London.
1820/1821 May-February.	Probably set up in practice in Ludlow during these 9 months.
1821 - 23rd February.	Advertisement in <i>Shrewsbury Chronicle</i> for an apprentice (also in 1823).
1821 - 21st June.	Married Miss E H Gardner of Leigh Court near Worcester.
20 th March 1821/22/23?	Possible dates of Hickman's first recorded experiment.
1824 - 14th August.	A Letter on Suspended Animation addressed to T A Knight Esq of Downton Castle, Herefordshire.
1828 - 7th August.	Receipt acknowledged of H's Memorial to Charles X King of France.
1828 - 31st August.	The Memorial forwarded to Académie Royale de Médecine.
1828 - 28th September.	The Memorial considered at a meeting of the Académie.
1830 - 2nd April.	Hickman died at Tenbury.
1830 - 5th April.	Buried at St Mary the Virgin, Bromfield

Letter to the Editor

Sir,

Keith Sykes article (50 Years On – *Proceedings*, Vol 34) reminded me that I met Dr Beecher in Paris in 1951 at an International Congress of Anaesthesia organised by Frank McMechan for 1939; his death and the onset of World War II caused it postponement. One of the principal speakers was Harold Griffith, who had revolutionised anaesthesia by the introduction of curare into clinical practice ten years before. My contribution was a preliminary study of assessing synthetic curarising drugs in volunteers. Afterwards, at a champagne reception in the Hotel de Ville, Dr Beecher told me he was a general in the US army in charge of anaesthesia and he had a Boeing 47 on standby at a military aerodrome outside Paris ready to take him to Korea. Of course, at that time I did not know that he was working on that famous paper – Beecher and Todd, 1954 – and that he had forbidden the use of curare by the US anesthesiologists in Korea, who were reduced to ‘borrowing’ curare from their Canadian colleagues. That paper was greeted with disbelief by the cognoscenti in Britain. It can best be described as a triumph of science over common sense.

Richard Bodman

Book Review

Servants of Medicine – Augustus Waller, Father and Son – Physiologists.

A H Sykes. York, William Sessions, 2004. ISBN 1 85072 371 6. Paperback, 214 pp, illustrated, indexed, £18.

HAS members will remember that Alan Sykes participated in the mini-symposium on A D Waller at the Liverpool meeting in 1997. He has been studying the history of British physiology for some years, and this book is a companion to his biography of William Sharpey, previously reviewed in the *Proceedings* (34; 74-76).

Physiology today is taught very differently from sixty years ago, when the approach was historical, exemplified by Best and Taylor's great textbook. Hence students of that generation learned about the progressive contributions of the great researches of the past, for example, Magendie, Bell, Bernard, Langley, Sherrington and, of course, the two Wallers, Augustus Volney and Augustus Désiré, not to be confused with each other. Dr Sykes has provided a lively and enjoyable account of father and son. Because AV died when AD was only fourteen years old, they never worked together, but Augustus Désiré was strongly motivated by the wish to preserve his father's memory and follow in his footsteps.

He listed his father's most important discoveries in the dedication of his textbook, published in 1896; emigration of leukocytes, degeneration and regeneration of nerves, the cilio-spinal region, and vasoconstrictor action of sympathetic nerves. Although the father was the greater

physiologist, the son, who used to refer to himself as 'the Wallerian degeneration', is of more interest to anaesthetists, mainly for his work on chloroform and his attempts to design a safe vaporiser, but also for being the first to record the human electrocardiogram. He had a longer and more settled life, and takes up two-thirds of the book.

Dr Sykes gives a very full account of the Waller family, of AD's career, his co-workers and the history of the University of London's Physiological Laboratory, which was virtually established and funded by Waller's brother-in-law, the Chairman of Huntley & Palmer, the biscuit manufacturers. The discovery of the human cardiogram, for which AD is now best remembered, is covered in detail, and the workings of the extremely sensitive Lippmann capillary electrometer are explained.

There is a separate chapter on Waller's work on chloroform, which provides a valuable survey of the earlier Commissions, and a detailed account of Waller's contributions. In the second decade of the 20th century during the First World War, he investigated the dietary needs of workers in various occupations, but he became involved also in almost mystic investigations of the responses of plants to various stimuli. The author concludes that AD sadly wasted much of his talent by failing to develop any of his researches in depth. When one compares his contributions to the *Proceedings of the Physiological Society* with those of others, his deficiencies are immediately obvious.

The only error in this book is that, in spite of this reviewer's attempts some years ago to put him right, Dr Sykes, both here and in his article in the *New Dictionary of National Biography* continues to describe Waller's last resting place, and the location of the family tomb, as East Finchley Cemetery, which does not exist. Although located on the edge of East Finchley, it is actually the St Marylebone Cemetery. The gravestone, being several rows in from the path and under a tree, is impossible to photograph adequately without special arrangements. The correction of the name is important because, on the High Road, in the centre of East Finchley, is the St Pancras and Islington Cemetery, where anyone would naturally go, and which this reviewer visited and found after exhaustively searching the registers, to be the wrong place.

The book is well produced, copiously illustrated, and contains a complete list of the publications of both father and son. For its biographical information, and a picture of the physiology establishment in England during the period, it is strongly recommended.

David Zuck

DR LUCIEN MORRIS: An Appreciation

Lucien Ellis Morris celebrated his 90th birthday in November 2004. Originally from Corydon, the historic capital city of Indiana, USA, he was educated at Oberlin College. His youthful hobbies were fencing, and as a guide on trips to the wilderness, so that he is adept in the canoe.

He qualified in medicine at Western Reserve University, Ohio in 1943. His training in anaesthesia was at Madison, Wisconsin under Ralph Waters, and at Iowa with Stuart Cullen. Here he was the first human subject exposed to Xenon anaesthesia, and made what was perhaps his best-known contribution, the Copper Kettle vaporiser. This was devised to deliver a constant, known, and finely graduated concentration of any volatile agent, and was a great improvement on the crude glass vaporisers in common use. Originally intended for chloroform, it proved equally useful for ether and later halothane. It was superseded only when the Fluotec was introduced to the American market.

He also developed a lifelong interest in carbon dioxide, increasing the efficiency of the circle system by placing two Waters' canisters in tandem (at about the time when Elam and Browne were developing their 'jumbo' canister). This interest led him to support Rewell's concept of an impeller, a fan to circulate the gases more frequently round the circle than achieved by normal ventilation, and hence passing through the absorber more often. His laboratory showed that the devices removed the need for one-way valves in the system, and that this reduced the work of breathing. Thus the adult circle could be used in children if combined with a divided chimney-piece, so that the mask dead space was flushed.

He was a firm believer in maintaining normocapnia. He allowed the patient to be his own monitor of CO₂ levels by, from time to time, pausing in his preferred hand ventilation to let spontaneous breathing break through, this implied that the neuromuscular junction was only partially blocked. To that end he devised a technique of light N₂O/O₂ anaesthesia with frequent small (1-2 mg) doses of curare.

Later he was to show that his technique increased endorphin levels. In Seattle he was Professor in the University from 1954 to 1968. From 1968 to 1970 he directed anaesthesia research at the University of Toronto, and then went to the Medical College of Ohio at Toledo as founding chairman of the Department of Anaesthesia and Professor from 1980. On retirement in 1985 he moved back to Seattle to continue his involvement in academic anaesthesia by lecturing at the University of Portland and widely elsewhere, by invitation.

In his early days, during army service, he had been much influenced by the meetings of the Section of Anaesthetics at the Royal Society of Medicine, and it is nice to record that the RSM in 1993 elected him to Honorary Membership of the Section. He had been visiting Professor at the London Hospital in 1980-1981. During his time in the UK Professor Macintosh at Oxford was also a great influence, and the reason why he looked to British anaesthetists to help staff his department in Seattle at the instructor level. That is where I, as one of five, got to know him during a year of combined clinical work and research. At his hands the 'BTA' degree had a lifelong effect, for it was an education, not only to new ideas, but to the best American traditions of scientific anaesthesia.

His library was extensive and its values personalised by his own bookplate, which showed him piercing the demon CO₂ with a fencing sword. The wide perspective provided and his own contacts with many of the early greats of the discipline gave him an abiding interest and commitment, which led to the Presidency of the American Association for the History of Anaesthesia. As he said: 'We owe it to our successors to talk the talk, for we know, we were there'.

He was elected an Honorary Member of the HAS in 1998.

T M Young

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