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SCOTTISH CONNECTIONS

page

Prof A.A.Spence	The Scottish Enlightenment (Abstract)	55
Dr R H Ellis	Edinburgh threads in the tapestry of early British anaesthesia	56
Dr T W Baillie	From Boston to Dumfries	67
Dr I D Levack	Aberdeen, archives and anaesthesia	70
Dr A G Macdonald	Early days in Glasgow; J H H Lewellin	74
Dr A W Raffan	The Scottish Society of Anaesthetists	80

FREE PAPER PRESENTATIONS

Dr J R Maltby	Sir Robert Christison's 'A Treatise on Poisons'	88
Dr R W Patterson	Dependency of an American discovery on Edinburgh	92
Dr P M Frost	Thomas Skinner	96
Dr S W McGowan	Highlights of anaesthesia in Dundee	99

Dr J Alfred Lee

Obituary by Dr T B Boulton	101
Appreciation by Dr R A Atkinson	104

THE SCOTTISH ENLIGHTENMENT *

Professor A.A.Spence

This term describes a remarkable period commencing at the end of the eighteenth century when intensive intellectual development occurred in Scotland, especially Edinburgh. The leading figure was David Hume who founded English Philosophy and Adam Smith, Professor of Moral Philosophy at Glasgow but better known for his economic treatise 'The Wealth of Nations'. Joseph Black, who succeeded William Cullen as the leading figure of the Edinburgh Medical School, was a close friend of Hume and Smith. Each contributed to the work of the others. Robert Burns, Walter Scott, James Watt, the painters Ramsay and Raeburn and architects James and Robert Adam spanned the same period.

The movement had three notable effects in addition to the immediate contribution of its leading figures to learning and literature. It stimulated a change in social and religious attitudes which enhanced the status of the ordinary citizen. It encouraged greatly the political movements which brought revolution to France and America. Finally it gave Scottish intellectuals a confidence which restored morale following the feeling of isolation subsequent to the Act of Union.

James Young Simpson was not a part of the movement but he was an undoubted product of it.

* The full paper given by Professor Spence has not been published here at his request. He has however, permitted this abstract.

Editor.

EDINBURGH THREADS IN THE TAPESTRY OF EARLY BRITISH ANAESTHESIA

Dr R.H.Ellis

In the latter half of the last century, even though Edinburgh was just one of several schools of medicine in Britain, it occupied a disproportionately important place in the early history of anaesthesia. This was mainly in relation to chloroform. However, I suggest that, initially at least, Edinburgh can claim more than a passing interest in early ether anaesthesia, and that it upheld chloroform anaesthesia in ways that were not always direct.

Four pioneers in Edinburgh

At the end of the 18th century, four men were born each of whom, having studied medicine in Edinburgh, went on to be closely involved with early anaesthesia in Britain. These were Henry Hill Hickman, Francis Boott, Robert Liston and James Syme.

Hickman studied medicine in Edinburgh and, by 1821, had qualified and returned to England as a family doctor.¹ He was, in 1824, the first person to prove that insensibility during surgery could be induced by inhalation. He died prematurely with his pioneering work almost unacknowledged. Virtually as Hickman left Edinburgh so Francis Boott² arrived to begin his formal medical education. Boott was born in Boston, Massachusetts but settled in London and soon after came to Edinburgh to study medicine. He was here from 1821 to 1824, when he qualified and returned to medical practice in London. Robert Liston³ emerged from his medical studies here in 1816 with a bias towards teaching anatomy and surgery ~ for which he had an excellent reputation. Indeed, it is quite likely that both Hickman and Boott were taught in Edinburgh by the young Robert Liston. James Syme⁴ began his studies in 1817 and qualified a few years later. Like Liston he had a strong bias towards surgery and its teaching.

When anaesthesia was discovered in 1846 it was not long before Boott, Liston and Syme became involved.

Francis Boott lived in central London. By 1846 he had given up formal medical practice but still maintained close contacts with medical friends and colleagues. As a result he was amongst the first to receive, from Boston, the news of ether's invention, and it was he who did more than anyone else to publicise and establish ether anaesthesia in the United Kingdom.⁵ Boott, together with James Robinson (a leading London dentist) conducted the first trial of ether anaesthesia in England on Saturday 19 December 1846.⁶ He sent the news he had received from Boston to the leading medical journals of the day and wrote private letters to medical colleagues in Edinburgh and elsewhere in the United Kingdom. He also told London's leading surgeon about ether's invention. This was none other than Robert Liston, his erstwhile Edinburgh contemporary and possible teacher who, by 1846, was Professor of Surgery at University College, London, of which college Boott was, by then, a Governor.

On 21 December, at University College Hospital, Liston performed his first operations under anaesthesia. Their success was publicised - mainly by Francis Boott and, to a lesser extent, by Liston himself.

Edinburgh's surgeons learn of ether: their muted reaction

Within a few days of the news of anaesthesia first arriving in Britain, several leading doctors in Edinburgh learnt of its invention from a number of different, but entirely reliable sources. James Miller, the Professor of Clinical Surgery, heard in a most enthusiastic letter from Robert Liston.⁷ Professor William Alison, the Professor of Medicine, heard in a letter from his London friend Dr Francis Boott. Without delay he passed Boott's letter on to James Syme, the Professor of Systematic Surgery, who thus heard indirectly James Simpson learnt all that he could directly from Robert Liston, with whom he went to stay in London a few days after Liston's first use of ether.⁸ Since Simpson and Professor Miller were next door neighbours in Queen Street¹⁰ it is likely that the two men discussed ether's invention together. Indeed, such discussion might have provided the stimulus for Simpson to meet Liston in London. In addition, the Edinburgh men would have been able to read about ether in the London and American journals. There is also evidence that one other unknown informant travelled directly from London to Edinburgh with the news.

So, had they wished to adopt ether anaesthesia energetically, the Edinburgh surgeons had more than enough information on which to act. Nonetheless, their initial reaction to anaesthesia was surprisingly unenthusiastic, and ether was not used in Edinburgh until 9 January 1847,¹¹ two weeks after London, by which time it had been used in several other far less prestigious hospitals.^{12,13} This is a paradox which has yet to be explained.

At this point it is important to note that anaesthesia was an entirely American invention, and that its initial propagation throughout the United Kingdom came about solely because of events which took place in, and were reported from, London. Those north of the Border had no opportunity to play a significant part in the establishment of ether anaesthesia for general surgery, and the best they could do at this stage was to follow along behind their London colleagues. Bearing in mind the enormous rivalry which then existed between London and Edinburgh this would have hardly been to their liking. Whether or not the surprising delay was a result of chauvinist pique I cannot say but, patently, anaesthesia did not really inspire the men of Edinburgh until one calendar month after its first use in Britain when James Simpson first described its use for obstetrics.¹⁴ His use of ether for obstetrics was widely publicised, and the controversy surrounding it, and Simpson's spirited defence of his practice, helped to redress the imbalance between London and Edinburgh as did, later in 1847, Simpson's introduction of chloroform.¹⁵

Earlier Edinburgh interest in chloroform - Waldie and Glover

It is interesting to note that two Edinburgh-trained doctors had investigated the properties of chloroform before Simpson had his

attention drawn to it as a possible anaesthetic. In 1842, Dr Robert Glover (in Newcastle) investigated the physiological effects of a whole series of halides, including chloroform,¹⁶ but did not, of course, deal with anaesthesia. Glover had qualified in Edinburgh in 1837.¹⁷ In 1847, yet another Edinburgh-trained doctor, David Waldie (of Liverpool) did investigate the anaesthetic properties of chloroform. For, early in 1847 reports appeared that 'Chloric Ether' had been used with partial success as an anaesthetic in London.¹⁸ These reports came to the attention of Waldie¹⁹ who had grown up in Scotland where he and Simpson had become friends as they studied medicine together at Edinburgh. After qualification their paths diverged and Waldie - eventually - gave up medicine to pursue a long and distinguished career in pharmaceutical chemistry.

Waldie had read of the Londoner's use of chloric ether to produce anaesthesia whilst working at the Apothecaries Hall in Liverpool. Aware that the chloric ether used in London was a mixture of chloroform and alcohol,²⁰ Waldie reasoned that the chloroform must have been the active ingredient. Accordingly, in Liverpool, he prepared a sample of pure chloroform but, significantly, did not get it used or publicise his work. Soon afterwards, he and Simpson met in Edinburgh and Waldie explained about chloroform. Simpson tried chloroform and introduced it into clinical practice. Later, Waldie resigned from Liverpool and emigrated to India where he lived and worked until he died in 1889. We will return to the same year, and the same sub-continent a little later.

The schism between Edinburgh and London

By 1848, the rivalry between Edinburgh and London was focused on anaesthesia. At first the debate was on the relative merits of the English ether and the Scottish chloroform; soon this developed into a lengthy dispute over whether or not chloroform was inherently safe, and finally it settled into an argument over whether chloroform killed by its action on the respiration or by its action on the heart: this also bore on the safest method of its administration.

Initially, the disagreement was reasoned professional and not extreme. However, within a few weeks of first using chloroform, Simpson felt confident enough to lay down the law on its use. His starting point was that chloroform was an extremely powerful agent. His view was that the stage of excitement (so often troublesome with ether) could be eliminated if chloroform was used, and if it was given, as he said 'in a large and overpowering dose',²¹ given 'as rapidly and in as full strength as possible so powerfully and speedily as to apathize the patient at once'.²² He gave chloroform in this fashion on a simple handkerchief or towel, and cautioned against using inhalers which, he said 'merely exhibited it by the mouth and not by the nostrils, in small and imperfect, instead of full and complete doses'.²² He took pride in recording that 'I have seen a strong person rendered completely insensible by six or seven breaths of the liquid'.²³ Simpson's belief that chloroform was entirely safe was supported unequivocally by his Edinburgh colleagues.

In London, these views were countered by the intuitive and cautious John Snow. Starting with the same argument as Simpson - that chloroform was indeed extremely powerful - Snow reasoned that this very potency made it essential to administer the agent gradually and to know what concentration was being breathed by the patient lest overdose should occur.²⁴ He emphasised the importance of a gradual induction, lasting two minutes or more, so that one could look for signs of impending trouble (by feeling the pulse) and could decrease the chloroform should alarming signs appear. All this, he argued, could only be achieved by using a well-designed, accurate inhaler. Snow's usual practice was to use his own chloroform inhaler, and he rarely used a handkerchief alone. Indeed he wrote 'Those who have but a handkerchief or a sponge had better use ether which ... has not yet been known to cause death'²⁵ - a suggestion which was hardly likely to appeal to the Edinburgh doctors.

It would be quite wrong to criticise Simpson and his Edinburgh colleagues for their initial beliefs - that chloroform was superior to ether, that it was safer, and that an inhaler was unnecessary or dangerous. By the standards of the time these points were quite defensible. But what was indefensible was the Edinburgh school's continued insistence on chloroform's safety when, early in 1848, reports of chloroform deaths began to appear. Possibly, the ever-diplomatic Snow recognised this when he wrote after the death of Hannah Greener: 'Dr Simpson cannot be blamed if in conferring on us the benefit of chloroform, his instructions did not issue like Minerva from the head of Jupiter, perfect and incapable of improvement.'²⁶ Simpson ignored this olive branch.

By coincidence, one of the earliest chloroform deaths was reported from Hyderabad, in India²⁵ (to where we will return). Soon afterwards, similar reports appeared with ominous regularity from many parts of the world. By and large those with Edinburgh affiliations reacted by maintaining that chloroform was safe, and adduced other causes for the deaths. Those without Edinburgh affiliations asserted that the chloroform was, or could be, to blame, and particularly dwelt on the method of its safe administration. (Revealingly, Hannah Greener's surgeon was Edinburgh-trained, and he was one of the very few such men to dismiss, out of hand, Simpson's arguments about chloroform's safety.²⁶)

Nonetheless, Simpson and the vast majority of his Edinburgh-trained colleagues refused to consider any view other than their own even when faced with a relentlessly increasing number of deaths under chloroform. Indeed, it became - as one historian of Edinburgh medicine has suggested - that support for chloroform was, for many years, a test of loyalty to Edinburgh and its traditions.²⁷ In this connection it is noteworthy that few - if any - of the many attempts which were made to discover a safer alternative to chloroform originated in Edinburgh.

Eventually, when it was acknowledged that chloroform might indeed cause deaths, the argument between Edinburgh and London changed. The Edinburgh view became that chloroform deaths were due only to respiratory depression, and were therefore predictable; the London view was that they were due to sudden stoppage of the heart, and therefore unheralded.

James Syme's lecture on chloroform

By the mid-1850s the Edinburgh position was clearly set out in a lecture by James Syme.²⁸ The lecture was remarkable for two features - Syme's fierce criticisms of those in London, and his certainty that the Edinburgh school of chloroformists was right and the Londoners so hopelessly, and dangerously wrong. Syme's teaching was that no special apparatus, or training - was required to give chloroform, the amount of chloroform should not be stinted, and the only worthwhile guide was the patient's respiration. It was important to prevent the tongue from falling back, but the circulation should be ignored completely. 'You never' he said, 'see anybody here with his finger on the pulse while chloroform is given.' These views were championed by the Edinburgh school for the next 60 years or more.

Snow replied to Syme's critical lecture,²⁹ and, by and large, the London school was adherent to Snow's views, which were encapsulated in the later classical picture showing Clover giving an accurately metered dose of chloroform in air, with his finger on the pulse.

Chloroform 'a la Reine': Snow uses Simpson's method

In 1853 and 1857, events at Buckingham Palace provided unintentional support (from London) for the Edinburgh school from a most high and unexpected quarter, namely Queen Victoria. During her eighth and ninth labours, she received chloroform - given to her by John Snow - and was delighted by the results.^{30,31} However, on each occasion that Snow gave chloroform to the Queen he did not (as he might so easily have done) use the opportunity to pour scorn on the Scots and their methods but instead poured chloroform on a handkerchief. In short, he followed Simpson's method rather than his own, which usually involved the use of his inhaler. Snow's strange inconsistency over Queen Victoria's chloroform in the 1850s was a boost for the agent, and for the Edinburgh method of giving it.

There was yet another Edinburgh dimension to this episode. Just as the Queen's Accoucheur in Scotland was the Edinburgh-trained James Simpson so her Accoucheur in England was also Edinburgh-trained. This was Dr (later Sir) Charles Locock,³² an Englishman, who had qualified from Edinburgh in 1821 having, incidentally, been a contemporary of Hickman.

How Snow came to be selected for the honour of chloroforming his sovereign is uncertain, for Snow's casebooks reveal that he and Locock had rarely worked together. However, it is unlikely that Locock and the Queen's other advisers would have omitted to ask the opinion of the one person who knew most about Snow's skills at firsthand - the then leading London surgeon (later Sir) William Fergusson.³³ Fergusson, then in charge of surgery at King's College Hospital, was the surgeon with whom Snow had worked most closely. He was also surgeon to Prince Albert and had his confidence. He was yet another graduate of Edinburgh from where he qualified in 1828, and where he worked until coming south to London in 1840.

Lister, the English devotee of the Edinburgh method

Joseph, later Lord Lister, upheld the Edinburgh view of chloroform before, during and after his 8 years as Professor of Surgery in Edinburgh from 1869 to 1877.³⁴ He had been trained in London - by Robert Liston amongst others, at University College Hospital - and might have been expected to hold views somewhere between those espoused by Edinburgh and by London. However this was not so, for Lister endorsed Syme's views in every detail and wrote emphatically of their correctness over a period of at least 21 years between 1861 and 1882.^{35,36} Why it was that such a brilliant and original man as Lister obdurately refused to consider any other view than his own and Syme's is difficult to comprehend, although the fact that he was Syme's son-in-law may have been a factor.

Lister's views on chloroform were opposed from London by Joseph Clover who, predictably, stressed the importance of watching the pulse and giving a known, controlled, and not excessive amount of chloroform.³⁷ But Clover was merely preaching to the converted and the distance between the two schools of thought, north and south of the Border, remained as wide as ever. Indeed it was about to widen, for what I have described so far is a tale of two cities. Now it becomes a tale of two continents as well.

Edward Lawrie and the Hyderabad Medical School

In 1846, three remarkable things happened, entirely by coincidence. Firstly, anaesthesia was discovered in America.⁶ Secondly, Edward Lawrie was born in Manchester.³⁸ Thirdly, in far-off India, a Medical School was opened in Hyderabad.³⁹

Twenty one years later, in 1867, Edward Lawrie qualified in medicine in Edinburgh³⁸ (at the same time, incidentally, as Thomas Lauder Brunton, of whom more in a moment). Lawrie became Syme's house surgeon, but was headstrong and outspoken and was soon in trouble with the surgical authorities in Edinburgh. He was summarily dismissed from the Royal Infirmary⁴⁰ even though he had the strong support and absolute confidence of his chief, James Syme, who was then enduring his last, lingering illness. For this support, Syme earned the undying respect and gratitude of Edward Lawrie who thereafter hero-worshipped Syme and his teachings.

Soon after his dismissal from Edinburgh Lawrie joined the Indian Medical Service, and was promoted to increasingly senior posts over the next few years. He continued to support Syme's views about chloroform. In 1879 he was stationed in Calcutta where, by chance, David Waldie was also living, although there is no evidence that the two men ever met. While in Calcutta Lawrie delivered a lecture on chloroform which was, as he said, 'a repetition, almost word for word, of an old lecture by the wisest man I have ever known - the late Mr Syme'.⁴¹

Lawrie was eventually appointed as the Residency Surgeon to the princely and independent State of Hyderabad where he also had charge of the Medical School, the students of which were trained at the Afzul Gunj

Hospital. Here, far away from Britain he developed a huge and successful chloroform practice, and taught his students to give it by Syme's method.⁴² He viewed with amazement and disbelief the reports of chloroform deaths in Europe, and with horror the criticism of the agent itself. For Lawrie the answer was simple. The chloroform was not being given correctly and if everyone would change to Syme's method - especially those in London who were creating such a fuss - the problem would no longer exist.

In 1889(the year in which David Waldie died in India)an important anaesthetic event was about to happen there which was to foster chloroform's use for decades to come. Lawrie decided to promote his views on chloroform in Britain, and he chose to begin his campaign at a royal occasion in Hyderabad when there was every chance that his remarks would be reported in far-off, misguided London.

In January 1889 the Duke of Connaught (one of Queen Victoria's sons) arrived to view the Hospital and Medical School at Hyderabad.⁴⁴ The Duke and Duchess were welcomed by an impressive group awaiting their arrival. This included, amongst others, the British Ambassador to Hyderabad, the young Nizam of Hyderabad, and Edward Lawrie himself.



The Afzul Gunj Hospital - a group awaiting the arrival of the Duke and Duchess of Connaught in January 1889. Edward Lawrie is second from the left.

Within a matter of minutes of a photograph being taken of the group, Lawrie launched into a scathing attack on the London method of giving chloroform, and emphasised its absolute safety if used, as he taught in Hyderabad, in the Edinburgh fashion as recommended by Syme. Lawrie announced that he had organised an investigation of chloroform's safety which had already been carried out by some of his junior military colleagues in Hyderabad. Under the leadership of Patrick Hehir, himself an Edinburgh graduate, they had formed what came to be known as the First Hyderabad Chloroform Commission. Its conclusions were published in 1888 and were entirely in support of Lawrie's (and therefore Syme's) views.⁴⁴ The 'Lancet' published details of the episode and affirmed that the conclusions were wrong.

As a result Lawrie inveigled the 'Lancet' to send an independent expert out to Hyderabad to repeat the experiments in order to settle the matter of chloroform's safety, or lack of it, once and for all. Significantly, the 'Lancet' chose as its independent expert Dr Thomas Lauder Brunton.⁴⁶ Brunton⁴⁷ had been a medical student at Edinburgh with Lawrie. Later he became a renowned researcher and a physician at St Bartholomew's Hospital in London. He was chosen by the 'Lancet' because - even though he was an Edinburgh man - he had already written that chloroform could kill suddenly by a direction action on the heart,⁴⁹ the exact reverse of Lawrie's and Syme's beliefs.

Within a few weeks of arriving in Hyderabad, Brunton, who was outmanoeuvred by Lawrie, had changed his views about chloroform completely and subscribed to those of Lawrie and Syme. He informed the 'Lancet' that chloroform could not possibly kill by a direct action on the heart and that its only danger was from respiratory depression.⁴⁹ This view was published in 1890 in the Report of the Second Hyderabad Chloroform Commission.⁵⁰ The essential conclusion was couched in terms which could have been - and probably were - taken from the text of Lawrie's oft-repeated version of Syme's lecture which had been delivered in Edinburgh 37 years previously.

Syme's thesis in 1854 had been that 'chloroform may be used judiciously so as to do good without exposing the patient to the risk of evil'.²⁸ Thirty seven years later the conclusion of Lawrie, Brunton and the rest of the Second Hyderabad Chloroform Commission was that 'The administrator should be guided as to the effect entirely by the respiration... Chloroform may be given in any case requiring an operation with perfect ease and absolute safety so as to do good without the risk of evil'.⁵⁰

In 1901 Lawrie retired from the Indian Medical Service - initially to London and then to Brighton - but, as an extremely persistent and forceful man, he continued to sweep aside all criticism of chloroform until his death in 1915.^{51,52}

20th century support for chloroform

The advent of the First World War perpetuated chloroform's use, as did World War Two. Thus, in 1947, Edinburgh celebrated the centenary of chloroform, in the knowledge that Simpson's agent was still commonly used and, in keeping with Simpson's doctrine, a survey in 1948 showed

that no less than 94% of family doctors in Scotland said that chloroform was their preferred anaesthetic for obstetrics.⁵³ Indeed, in the even more recent past, in 1963, an even more distinguished graduate of Edinburgh suggested that chloroform could be safely used and was reluctant to condemn it.⁵⁴ Eventually, chloroform was superseded only when a similar but safer alternative - halothane - appeared on the scene.⁵⁵

Conclusion

Without Syme and Lawrie and their followers, Simpson's chloroform would have been discarded many decades before its actual demise. That it continued so long can be attributed to the zeal with which the Edinburgh school supported their agent. They not only held their views sincerely but were also determined to see them prevail. With hindsight it is surprising that the compelling work of Embley in 1902 in Australia,⁵⁶ and of Goodman Levy in 1911 in Britain⁵⁷ (each of whom showed the nature of sudden death under chloroform) should be so widely acclaimed and yet be so ineffective in eliminating chloroform from clinical practice. Similarly, the damning recommendations of many other investigations and commissions into chloroform's safety⁵⁸ were, over the decades, published, accepted and then ignored.

Earlier I described the Edinburgh school's perpetuation of chloroform by refusing to accept criticism of it, as being 'indefensible'. I hold to that, but it is only one half of the story. For the London school was equally culpable. The evidence of chloroform's danger was, over the years amassed and assessed by an impressive body of experts who were mainly in London. The evidence was convincing and the lessons were clear to see. The London school railed against chloroform for no less than one hundred years, and its inability to force its well-based and overwhelming arguments into general acceptance is, surely, the greatest enigma of the whole chloroform story.

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FROM BOSTON TO DUMFRIES

Dr T.W.Baillie

It is interesting that one of the first 'public' exhibitions of ether anaesthesia outside the United States of America should have taken place in a hospital in the south-west of Scotland. Like Francis Boot's successful administration, the operation in Dumfries was performed on the 19th December 1846, two days before Peter Squire's experiment at University College Hospital.

In all three cases the news of Dr Morton's etherization at Massachusetts General Hospital was conveyed to the Old World by ship, in the Dumfries case by the Royal Mail Steamship 'Acadia' under command of Captain Harrison. Dumfriesians have always asserted that their Infirmary had the honour of introducing ether anaesthesia to Great Britain. This claim is to be found in a number of publications, including the local newspapers, guide books to the town, the Statistical Records and the 'Lancet'. Several of these accounts contain inaccuracies but in general they agree regarding a number of details including the date, the names of the participating doctors and the means by which the news was brought to the town from America. The date, 19th December 1846, is to be found in the 'Lancet' in a letter from the surgeon who was stated to have administered the ether, Dr William Scott. It is repeated in the local Parish Histories and New Statistical Account (1876).

A number of publications¹⁻⁴ state that the news was brought by the young doctor William Fraser who travelled from Boston on board the 'Acadia'. This William Fraser had seen ether being used in America but there is no evidence to suggest that he had attended one or any of Morton's operations. Fraser had every reason to be in Dumfries at the end of December 1846. It was a natural wish to be home for Christmas with his widowed mother who had now lost four of her six children, three recently. In addition, it is understandable that he would hasten to tell his colleagues at the Infirmary of what he had seen on the other side of the Atlantic because William Fraser had strong ties there. William Scott was a boyhood friend (both were 26 years of age at this time) and the third person mentioned in a number of accounts of the Dumfries story, James M'Lauchlan, then senior surgeon to the Infirmary, had worked for a number of years in Fraser's father's surgical practice at Dumfries.

Not surprisingly, it has been asked how Fraser ever reached home in time to assist with an operation on 19th December when we know that the 'Acadia' docked in Liverpool on 16th December. This question fascinated the late Dr Stanley Sykes⁵. At this time railways were being constructed all over the country and Sykes went to a great deal of trouble to postulate a possible way of reaching Dumfries on or before the 19th. Unfortunately for Sykes his arguments were based on inaccurate information which he had obtained from British Railways. We now know that the Lancaster-Carlisle Railway was opened on the day prior to the arrival of the 'Acadia' in the Mersey^{6,7} and that by the evening of the 17th six trains had crossed Shap in either direction.

Even so, a possible alternative route by sea was available to Fraser aboard the Carlisle, Annan and Liverpool Steam Navigation Company's 'Royal Victoria'¹⁸. This vessel sailed from Liverpool for Port Carlisle and Annan Waterfoot at 8pm on Thursday 17th December. The voyage to Annan took some ten hours and coaches were available at this destination to convey passengers and baggage over the remaining sixteen miles to the King's Arms at Dumfries. No matter whether he decided to complete his journey by sea or rail, therefore, Dr Fraser could have reached his home at least twentyfour hours before the operation on 19th December 1846.

Simpson and ether.

James Young Simpson had occupied the Chair of Midwifery at Edinburgh since 1840. His interest in anaesthesia is general knowledge, especially his part in establishing the long-continued Scottish tradition of chloroform anaesthesia. His knowledge of the first use of ether at Dumfries Royal Infirmary has been referred to on several occasions^{1,9-11}. Not only was he aware of this early experiment but he actually credited William Scott with priority regarding the date. This is an important fact since Simpson first learned of ether from reports emanating from London. Although Edinburgh at one time had been too small to contain both Simpson and Liston it appears that reconciliation followed Robert Liston's appointment to the Chair of Surgery in London and, on hearing of Liston's success with ether, Simpson packed his bags and spent Christmas 1846 with Liston in London (this resulted in the first use of ether in Edinburgh on 19th January 1847).

It is regrettable that the Dumfries Infirmary records of the time are no longer to be found. This deprives us of such information as the name of the patient, the operation performed and the nature of the apparatus employed (the latter is described in one publication as 'hastily improvised'). Local rumour has it that the operation was an amputation performed on a worker on the Dumfries-Carlisle Railway, at that time under construction, but this cannot be substantiated. One interesting fact in this connection is that James Y. Simpson of Edinburgh carried out an investigation into the influence of ether on survival after major amputations and that he corresponded with one of the Dumfries surgeons on this subject in June 1847. The reply from the surgeon at Dumfries Infirmary, Alexander Borthwick, states that in the first six months of etherization only one major amputation was performed under ether and that the patient died shortly thereafter.

It may be therefore, that the first operation under anaesthesia at Dumfries was not an amputation. Alternatively, it may mean that the first operation in the Old World was also associated with the first post-anaesthetic death! In any case, one has the impression that the outcome of Scott's experiment at Nithbank was not entirely satisfactory. The failure of the gentlemen involved to publicise their priority at the time or shortly afterwards can hardly be attributed to their humility alone and it may be that the first surgical operation under ether anaesthesia in Europe was attended by disappointment.

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ABERDEEN, ARCHIVES AND ANAESTHESIA

Dr I.D.Levack

Aberdeen University was founded in 1495 and today is still the most northerly, and one of the oldest, universities in Britain. An early connection with anaesthesia is based on two individuals both of whom originated from Aberdeen, one a professor of medicine and chemistry and the other an Aberdeen graduate who became the leading obstetrician of his time. I am referring to William Gregory and James Matthews Duncan.

The discovery of chloroform

Matthews Duncan moved to Edinburgh to become assistant to James Young Simpson soon after he qualified at Aberdeen in 1846. Under Simpson's direction he became involved in the quest for an agent superior to ether for obstetric analgesia¹ and his (Matthews Duncan's) part in this is recorded in a limited edition biography written by his sister.

William Gregory also played an important role. He had been Mediciner (professor) at Aberdeen from 1839-44 before moving to the Chair of Chemistry at Edinburgh. He was a contemporary and friend of the German, Justus von Liebig and before his Aberdeen appointment had spent many weeks in the laboratory of the latter in Giessen collaborating in studies on organic chemistry. Chloroform was synthesised there in 1831.

In October 1847 in Edinburgh, Matthews Duncan collected from Gregory a batch of volatile liquids as potential anaesthetics for assessment by inhalation. Chloroform was amongst these and was tested by Matthews Duncan on his own at Simpson's house in Queen Street where he lodged. Having selected chloroform, and convinced that it was the agent they sought, he brought it to the attention of his chief after supper that night in the company of George Keith; the famous party followed although Simpson had been informed of the possibilities of chloroform some time before this by his friend David Waldie. After the discovery the glory bestowed on Simpson, whose reputation and position undoubtedly influenced its widespread acceptance, left Matthews Duncan less than gratified by the lack of recognition given to him by his chief. He continued as Simpson's assistant initially and later built up the largest obstetric practice in Edinburgh and became heir apparent to the Chair of Midwifery on Simpson's death in 1870. The Town Council did not appoint him and the successor was Simpson's nephew. Matthews Duncan left Edinburgh in 1877 accepting an invitation to become obstetric physician to St.Bartholomew's Hospital. This was the year in which Joseph Lister went to King's College Hospital from the Chair of Clinical Surgery at the Royal Infirmary of Edinburgh.

Gregory subsequently played an important role in devising the means for large scale production and purification of chloroform consequent to the demand following its widespread use as an anaesthetic.³

Gregory and morphine

William Gregory was the sixteenth of the 'academic Gregorys' to hold a Scottish professorship. He was a fifth generation descendant of the Reverend John Gregorie of Drumoak, a small parish a few miles to the west of Aberdeen, and the family has a renowned hereditary genius.⁴

Gregory's contribution to successful anaesthetic chloroform manufacture was overshadowed by his discovery of a cheap method of manufacturing salts of morphia.⁵ The importance of these developments was inadequately recognised in his lifetime. This was because, relating to chloroform, the personalities of all other workers in the field were obscured by that of Simpson. In the case of morphia, it can now be seen in retrospect that certain events had to occur during the twenty four years after Gregory's discovery before it could be developed to its full significance.

He produced the muriate (hydrochloride) of morphia in 1831,⁶ three years after he graduated in medicine. Morphine acetate had been available since 1823 but it was rarely pure and the main contaminant was narcotine. Gregory devised a process to isolate and purify the salt at no greater cost than an equivalent dose of laudanum. At that time there was no clear advantage of the pure morphia salt over laudanum. But in 1855, Alexander Wood of Edinburgh introduced hypodermic injection to medical practice, and the future of pure morphine salts, which were essential, was secured. Twenty four years had passed before the technique of administering narcotics was sufficiently developed to initiate a demand for pure salts of morphine in quantity. The demand elevated 'Gregory's process' to a commercial scale. Gregory died within three years of this and it is clear why appraisals of his work placed wrong emphases and values on his achievements. At that time the medical use of morphine by injection had not yet become widespread.

He is buried in a family vault in the Canongate Churchyard in Edinburgh.

Appointment of a chloroformist to the staff of the Royal Infirmary, Aberdeen.

William Pirrie, the first Professor of Surgery in Aberdeen used chloroform during the excision of a breast tumour ten days after Simpson read a paper on his experience with chloroform to the Edinburgh Medico-Chirurgical Society in November 1847. Surgical arrogance and rejection greeted a proposal by the Aberdeen Hospital Committee to appoint a staff chloroformist in 1856 and it was not until a death under chloroform at the hands of Pirrie in 1871⁸ that a regular chloroformist was appointed. Some insight to this period is available in the biography of Sir Alexander Ogston⁹ who was Pirrie's successor and is best remembered as the discoverer of staphylococcus pyogenes aureus. Ogston wrote a short account entitled: 'How anaesthetics came to Aberdeen' and described how, as a student in 1860, he was aware of debate among the surgeons whether chloroform 'the only anaesthetic thought of practically in Scotland' ought to be used in operations - usually it was not. When he graduated five years later he stated it was then widely used, and one of his duties was to act as an anaesthetist.

The first designated chloroformist in Aberdeen was Alexander Dyce Davidson and he remained in post until 1875; he later became Professor of Materia Medica. The vacancy was advertised in the local press and Dr Patrick Blaikie Smith was appointed. Blaikie Smith became an ether devotee and designed his ether inhaler.



Alexander Dyce Davidson

Aberdeen versus the Scottish chloroform doctrine

Soon after Blaikie Smith's article in the 'Lancet' on his new ether inhaler¹⁰ and his antagonistic views on chloroform John A MacWilliam arrived in Aberdeen as Professor of Physiology. An important series of observations followed including the first description of ventricular fibrillation,¹¹ and also its association with chloroform inhalation in various animals.¹² This was contrary to the popular view of chloroform in Scotland at that time and also to the findings of the Hyderabad Commissions. Much of this background, and an assessment of MacWilliam's contribution, is set out in the exhaustive treatise on the history of inhalational anaesthesia by Dr Barbara Duncan.¹³ More recently, MacWilliam has also been credited with providing the original concept and experiments on cardiac pacing.^{14,15}

The cogent devotion to ether anaesthesia in the Aberdeen school stemmed from Blaikie Smith. A significant advance in the use of open drop ether was later made during World War 1 by Dr Alexander Ogston, a general practitioner anaesthetist, who developed his eponymous wire frame mask in order to achieve both a higher inspired concentration and a more efficient (economical) use of ether.¹⁶ He was not related to his surgical namesake who has erroneously been credited with this device in the Charles King Collection.¹⁷

Shifts in concepts of wound healing related to the use of chloroform occurred at the turn of the century although the latter issue can still engender heated debate.¹⁸

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EARLY DAYS IN GLASGOW AND J H H LEWELLIN

Dr A.G.Macdonald

I decided to search through the old Glasgow newspapers to see if I could find something new but was depressed to discover that in 1847 there were seven daily newspapers in Glasgow, all of equal prominence then, though only the Glasgow Herald has survived. All the previous references to anaesthesia have been from the Herald so I decided to start with the Courier and then the Argus etc. beginning on the 1st January 1847. That very issue of the Courier contained the entire reprint of the famous article from the Medical Times headed 'Surgical operations without pain...'. This was the first that Glasgow readers knew of the discovery of ether.

On 5th January, the Courier published an extract of Dr Bigelow's paper in the Boston Medical and Surgical Journal which had appeared in the Morning Chronicle describing exactly his experiences with about ten patients given ether. This long article gives ample information to enable anyone to go away and administer ether himself and yet it was several weeks before Dr Laurie in Glasgow Royal Infirmary used it.

The Glasgow Herald of Friday 15th January describes Dr Duncan's first use of ether in Edinburgh, which had taken place on Saturday 9th January. The Courier of the next day, Saturday 16th, gave further information. Under the heading of 'Dental Surgery', it describes the use of ether by a Mr Lewellin on a twenty three year old man for extraction of an upper molar. It is an impressive description revealing a remarkably scientific approach to the experience. It describes how the inhalation continued for two minutes, was slightly complicated by the patient swallowing at one stage instead of inhaling, and how the pulse rose from 64 to 80 and the face became slightly flushed. It also says that 'not the least attempt at coughing as observed in the American experiments' took place. Presumably Lewellin had read Bigelow's article. He says how the tooth, of a particularly bad shape and in a difficult locality, was removed without pain. He finishes by inviting anyone to come to witness the new technique. He gets full marks for publicising his experience so well. Twelve days later, again in the Courier. I found another communication from Lewellin written on 26th January:

Use of Ether in Dental Operations

To the Editor of the Glasgow Courier

Sir, I observed in your paper to-day a notice copied from the Guardian in which it is stated that the vapour of ether was first used in Scotland on 5th inst., Now as there appears to be so much importance attached to the date when it was introduced to Scotland, I beg to state that I employed it first on the 4th inst., in an apparatus similar in principle although perhaps not in detail to the one used in London, so that instead of experimenting with an imperfect I made use of a perfect apparatus, and that a day prior to the one stated in your paper as being the first. The case of mine which you were kind enough to notice on 16th inst., was witnessed by several gentlemen, medical and scientific, as well as friends of the patient, and it was at their instigation that the case was brought before the public.'

Lewellin goes on in the next few sentences to urge caution about not using the agent too rashly in all cases, he warns against the dangers of leaving ether exposed for a long period to the influence of air and light, and how toxic metabolites would injure the texture of the lungs etc, and he finishes: 'I merely state these facts knowing that ether will and must become general in dental surgery for which it is peculiarly applicable, and as the greater number of dentists practising are not properly qualified medical practitioners, and consequently ignorant of the circumstances. With many apologies for having trespassed so far on your space, I am sir, Your obedient Servant, J.W.H.Lewellin, MRCSS, 86 West Regent Street, 26th January 1847'.

The MRCSS seemed a bit strange, it didn't stand for anything obvious but presumably he had a qualification of a Royal College of Surgeons.

A review of the Courier of the 26th January produced the notice which Lewellin had obviously seen. It is only six lines long and it is under the wrong heading and could therefore be easily overlooked: 'We learn that Mr Buchanan, Surgeon Dentist of this City has introduced the vapour of ether in his practice. Mr. Buchanan was the first to employ this powerful agent in Scotland, having used it successfully on the 5th inst. Although at that time the apparatus employed was a simple bent glass tube, yet the effect was most satisfactory.'

So Lewellin read this and was quick to respond to establish that he was a day earlier than Buchanan, and that he had many witnesses. There is no other correspondence in any of the papers and so presumably Buchanan conceded victory to Lewellin.

I decided to see if Lewellin appeared in the Medical Directory. The first one issued was in 1845, and on page 252, there is a Lewellin, John Henry Hill, S.1842, East Indies. It could be the same Lewellin though the initials in the Courier were JWHL but it was too much of a coincidence. As for the Henry Hill bit, I wondered if he could be a cousin of Hickman or perhaps his father-in-law. As Hickman died in 1840 and as I did not know Lewellin's age I could only speculate. An earlier page indicated that S.1842 meant he was a member of the Royal College of Surgeons of London, so the MRCSS in the Glasgow Courier was a misprint for MRCSL and the JWHL should have been JHHL. Almost certainly it was Lewellin's handwriting which had let him down.

I searched the Medical Directories of the next twentyfive years until 1870, and as there was no sign of him I gave up. In the meantime, I had followed up another J H Lewellin who appeared in the 1852 Directory. He had joined the Dragoon Guards and had served in the South African wars. He seemed to have had a bit of the Errol Flynn about him but I eventually discovered from the Curator of the Dragoon Guards Museum in York that his initials did not stand for John Henry but for Jenkins Humphreys!

I turned to the postal directories for Glasgow. He is in the 1846/7 edition - Surgeon Dentist, 86 West Regent Street - and is listed as one of thirteen dentists, all of whom resided within three or four blocks of

each other. He only appeared in 1846 and 1847, not before or after, so he was only in Glasgow two years at the most.

I had no idea where he had come from or what had happened to him. I went down to the Royal College of Surgeons in London to follow up his MRCSL. In the list of Fellows and Members of 1848 his name is recorded, having passed his exam on April 8th 1842, and in the examinations Register for that day his name appears, the bottom one of the list, very faded and showing his origins as the East Indies and his exam fee of £21, which was of course, 20 guineas. The College had no more information on him.

I then checked the annual censuses for both Glasgow and London for 1841 and 1851, but there was no sign of him.

I had run out of leads, so I continued my search through the old newspapers. My next discovery was that Lewellin began advertising his etherising skills only three days after his letter establishing himself to be the first etherist. An advertisement appeared in the Glasgow Argus every Monday from 1st February to the end of March. He identified himself as MRCSL and also as a member of the Royal Parisian Medical Society. He informed the reader that '....having almost from its first introduction used the vapour of ether, has constructed an entirely new apparatus..... which avoids contamination of air and light and able to regulate the dose to suit each individual....'. At the foot of the advertisement it said: 'Advice gratis to the poor from 9-10 every morning except the Sabbath', though he did not actually say that any treatment required would be free!

I tried to find out more about the Royal Parisian Medical Society but to no avail so far. The RSM Library has never heard of it, and they know of no journals or proceedings. I wrote to Professor Jean Lassner in Paris to ask for his help. He replied to my letter but has not so far found anything useful.

In April, Lewellin's advert became bigger still and he publicised his 'Improved ether inhaler' which he said had never failed, 'an argument that cannot be brought forward in support of any other apparatus'. He was a most confident and persuasive person, and highly enterprising. He continued to advertise in this high profile fashion all through April, May and June, and then suddenly it all stopped on June 21st 1847. After that date, there was nothing in any of the Glasgow newspapers and I believe that that was when he left Glasgow.

He must have been very well known by this time, but his name does not appear in the early minutes of either the Glasgow Southern Medical Society or the Medico-Chirurgical Society of Glasgow; both societies dating from the 1820s. There was no Dental Society in Glasgow then, no Dental Hospital (it was opened in 1879) and no Dental Department at the Royal Infirmary.

Then Dr Henry Noble, Archivist to the Dental Hospital in Glasgow alerted me to a collection of old newspaper cuttings and advertisements compiled by Mr Menzies Campbell, the author of The History of Dentistry. In this collection we found an advertisement by Lewellin in December 1845, over

a year earlier than the first communication I had found. It is in the Glasgow Herald this time: 'Mr Lewellin, M.R.C.S.L., Surgeon Dentist, lately arrived from Paris (where it is well known that Dentistry is studied with the utmost precision and taste), having by a long course of studies in that Capital, as well as in some of the principal German Universities, as in London, made himself thoroughly acquainted with all modern improvements in dental practice, feels confident, from these many opportunities, of giving perfect satisfaction to all parties applying to him, at his residence 86 West Regent Street. Advice gratis to the poor, from 9 - 10 o'clock daily except Sabbath'.

However, the most extraordinary thing of all was that on checking the original paper, I discovered that in a different column on the same page, further down was another advertisement, this time in French: 'Avis aux Etrangers', a notice to foreigners, saying how he had trained with the most distinguished Professors in Paris, and how they will get the very best of treatment if they come to his residence etc.

He must have had a mistaken impression of the linguistic ability of the average Glasgow reader, most of whom I suspect in those days, like now, could barely understand English, let alone anything else! I think he fancied the idea of establishing an up-market clientele for his practice. He was after the intelligentsia and the Yuppies. Well, if so, it was quite an impressive performance, because there was more to come. On the same page in yet another column of this now historic newspaper, there is a third advertisement, this time in German, saying much the same thing, but unfortunately not identifying which German universities he had trained in. This advertisement may have been rather a waste of money, there were probably very few Germans in Glasgow at that time, there was no German Department at the University, and there was very little trade with Germany.

So in summary, Lewellin was probably born in India or Ceylon, had sat his MRCS in London, had then gone to Germany and to France and had moved from Paris to Glasgow in late 1845, leaving in June 1847.

West Regent Street in Glasgow joins Buchanan Street at the bottom of a hill. At the corner with Hope Street is the Yorkshire Building Society, now number 88, but the street numbers were changed in 1920 and this corner house was previously number 86. I wrote to the head office of the Yorkshire Building Society in Bradford asking if the title deeds identified whether Lewellin had bought the house or not, but I have had no reply.

As I had no further leads I went back to the Medical Directories beginning where I had left off in 1870. I was soon rewarded; under an obscure section headed 'Practitioners resident Abroad with British Qualifications', in 1872, appears Lewellin, John Henry Hill, Prahran, Victoria, Australia, MRCS England, 1842'. So he was alive and kicking twenty five years after he had left Glasgow, perhaps he had been in Australia all this time.

The insert in 1873 is the same, but in 1874 St Bartholomew's was added. Obviously Barts was the place to be in the 1800s and I will come back to

this in a moment. Heidelberg was always a likely centre for Lewellin to have been, but there is no mention of the other centres which he had trained in. Being a JP confirms that Lewellin was a respected member of the community. He was Vaccination Officer for Gardiner and Caulfield, two suburbs of Melbourne; and he was a Surgeon Major in the Southern Rifles, which was a voluntary TA regiment.

In the Medical Directory of 1882, nine years later, as well as John Henry, we have Augustus John Richard Lewellin '.....son of Lewellin', another doctor, presumably in partnership with his father, whose name disappeared for good the next year. There is no sign of an obituary right through to 1910, when they stopped issuing lists of deaths in the Medical Directories.

The archives of St Bartholomew's Hospital showed that Lewellin had indeed signed on in 1842. His entry in the Register showed his London address as 40 Gibson Square, Islington, and his home address Fort William, Calcutta. Fort William made me wonder if Lewellin after all had had some Scottish connection, and that this was the name of their Calcutta home, but I discovered that Fort William was the old colonial name given to Calcutta by the armed forces and the early traders. Gibson Square in Islington is still a very smart and fashionable terrace, well up to the standards to which John Henry liked to adhere. He was just a lodger there and we don't know how long he stayed. In the 1883 Australasian Medical Directory, Lewellin's address in Prahran was 116 Chapel Street. One of my colleagues in Glasgow, Dr Mike Telfer, has a daughter who lives in Melbourne. We wrote to her and she informed us that No.116 Chapel Street is now a Greek restaurant!

Tetanus in Australia - chloroform treatment

Although we now have a few addresses of where he lived, we still do not know where he was born, when he died, or when he went to Australia. I wrote to Dr Gwen Wilson, the Australian archivist, asking for her help in looking for an obituary in the Australian records. She wrote back in ten days enclosing a photocopy of an article by Lewellin in the Australasian Medical Journal of 1862. It concerns the extraordinary case history of a twelve year old boy with tetanus who was treated by Lewellin with chloroform. It is clear from this article that Lewellin is not a practising dentist or anaesthetist, but is now a general practitioner. The outlook for patients with tetanus in those days was hopeless and the boy's parents had refused to give the treatment which Lewellin had prescribed, insisting that the boy should be allowed to die quickly. Lewellin was not to be put off; he attended the house three times a day for a week then twice a day for another and each day for the next two weeks, administering the treatment himself. This was hard to believe: 4ozs chloroform every two or three hours if possible, or as required each day. It resolved the spasms and delayed the onset of further spasms. The main trigger to the boy's contractions appeared to be a decayed molar tooth, so Lewellin being the expert operator-anaesthetist that he was, extracted it under chloroform, and pulled out another one as well for good measure! The boy recovered completely and there is no mention whatever of hepatic necrosis! This unique use of chloroform in tetanus would surely only have been considered and

administered by someone well versed in the problems of anaesthesia. We don't know if Lewellin had been 'keeping his hand in' or not.

I had to employ a professional researcher to find Lewellin's origins from the Public Records Office at Kew. She replied recently, sending me copies of the birth certificate and the baptism of John Henry Hill Lewellin, born 18th September 1818 at the Fort William garrison, and bap-tised the following May at the English Church in Calcutta. His mother was Ann Eliza, although we don't know her surname yet - I am still hoping it might turn out to be Hickman! - and his father Henry was a Lieutenant in the 24th Light Dragoons. Unhappily his father died only two years later from an injury received, I think, about four years earlier, presumably in action, so John Henry never really knew his father at all.

Gwen Wilson sent me another photocopy, again from the Australasian Medical Gazette, this time intimating that John Henry Hill Lewellin died at his residence, Westbury Street, East St Kilda, Melbourne, on October 12th 1886 in his sixty ninth year. This sudden discovery gave me quite a shock and left me strangely sad. He had actually died, having enjoyed only three years since his retirement.

Born in Calcutta, Lewellin gained his Membership in London, trained at Bart's, then went to Heidelberg and perhaps elsewhere in Germany as well, then to Paris, and then to Glasgow in late 1845. He maintained this flamboyant and high profile style both before and after his experiences with ether on January 4th 1847 before leaving Glasgow. When exactly he arrived in Australia I don't know yet, but he was certainly there by 1862. He retired in 1883 and died three years later.

John Henry Hill Lewellin deserves a place in the history books certainly as the first etherist in Glasgow and - with a long low bow to Tom Baillie, perhaps the second etherist in Scotland, or perhaps as the man who gave the first authenticated successful ether administration in Scotland.

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* 'Boston to Dumfries' earlier. Editor

THE SCOTTISH SOCIETY OF ANAESTHETISTS

Dr A.W.Raffan

Seventy-five years ago a small group of doctors in Scotland, all in general practice, but all known to be interested in and practising anaesthesia, decided to meet to discuss their problems. Fourteen were invited to a dinner in the Balmoral Hotel, Princes Street, Edinburgh on the 20th February 1914.

After dinner a business meeting resolved unanimously that a society be formed to be called The Scottish Society of Anaesthetists with the objects of promoting the study of the science and practice of anaesthetics, the proper teaching thereof, and the conservation and advancement of the interests of anaesthetists. Ordinary membership was to be restricted to members of the medical profession practising the specialty of anaesthetics.

Foundation

Eleven doctors attended - Drs McAllum, Torrance Thomson, Gibbs, Jones and Ross of Edinburgh; Drs Boyd, Lamb, Napier and Fairlie of Glasgow and Drs Johnston of Aberdeen and Mills of Dundee. Drs Home Henderson of Glasgow and Ogston and Robertson of Aberdeen sent apologies and were admitted to Founder Membership at the first regular meeting which was held in the Guild Hall, Edinburgh on the 18th April 1914. Dr McAllum, who had been elected first President, presented his address entitled 'False Anaesthesia'¹. He was a keen and expert chloroformist and a leading exponent in paediatric anaesthesia² but sadly he died shortly afterwards.

The distractions of the First World War might well have destroyed this fledgling society for it was five and a half years before the second regular meeting was held in November 1919 under the Presidency of Dr Boyd. Dr Johnston reported the death of another Founder Member, Dr James Robertson of Aberdeen, who had been killed in action in March 1918 when serving as OC of the 2/1 Field Ambulance of the Highland Division.

In 1920 the Annual Meeting was held in Aberdeen when Torrance Thomson was President. The Vice-President, John Johnston, read a paper on 'The Importance of carbon dioxide in relation to general anaesthesia'. At this meeting Ross MacKenzie of Aberdeen became a member and in November of that year Johnston became President; he was re-elected President in November 1921 when he spoke about 'Pre-anaesthetic intoxication'.

In April 1922 Alexander Ogston of Aberdeen read his paper 'Notes on the administration of ether by the per-halation method'. He claimed that by using his adaptation of the Bellamy-Gardner mask he found no difficulty in inducing even a powerful subject with 'straight' ether.³ Those who have used this mask will agree that the simple addition of the chimney served to trap the expired ether vapour, thereby increasing the concentration and speeding the induction by the partial retention of expired carbon dioxide. Indeed this mask was so popular with the house

physicians who had to give the emergency anaesthetics in those days that they invariably armed themselves with one when they went further afield. You will appreciate my chagrin many years later when, attending a course in London, Dr Ronald Jarman held up this mask and invited his audience to name it. Scotsmen are naturally reticent, and I am one, but when he got no response and gave it some other name, it was too much, I tried to correct him but to no avail.

Chloroform and ether

The controversy about the use of chloroform raged throughout this period. I quote Dr David Lamb of Glasgow: 'We had to fight against the belief and teaching of Sir William Macewen and all other Scottish surgeons that chloroform was the one and only anaesthetic, even though the death rate 'on the table' was very high, an average of fifty annually in Glasgow Royal Infirmary'. 'The vested interest of the general practitioners for whom the fee for the administration of chloroform was a valued perquisite, also had to be overcome. We went through all the stages of mixing chloroform and ether, ether with Clover's inhaler, later preceded by nitrous oxide or ethyl chloride.'⁴ When Arthur Mills of Dundee was President in 1923 his address was 'The present position of chloroform'. He was an outspoken critic, no doubt because so many anaesthetics were being given by the casual anaesthetist. The choice of chloroform by the tyro was obvious, it is non-irritant, very quick in the production of relaxation which satisfied the surgeon, and he could easily say '....the operation was successful, but the patient died'. Dr Mills stressed the teaching of open ether to his students, and at a meeting in the 1950's I recall that he addressed the Society as follows: 'When I went to France in the First World War I left all my juniors with the instruction that open ether, slow as it may be, should be the routine'. And he concluded his exhortation as he slowly dropped the ether on the mask: 'This do ye in remembrance of Mills'.

In 1924 the question of admitting women as members was raised, not without some opposition, but the proposition was agreed - by a majority of three. In the following year the first lady was elected, Dr E.J. Swan. In 1926 the Society were hosts to the Associated Anaesthetists of the United States and Canada represented by Drs Mary Batsford of San Francisco, Wesley Bourne of Montreal, Wade Elphinstone of Pittsburg, Hammond of White Plains, New York, McMechan of Avon Lake, Ohio, and McKesson and Schuey of Toledo, Ohio.

Ross MacKenzie gave a lantern lecture and demonstration on carbon dioxide in nitrous oxide and oxygen anaesthesia. 'Re-breathing,' he claimed, 'when properly regulated was an important factor in gas and oxygen anaesthesia since it conserved the body heat, retained the expired carbon dioxide, and delayed the onset of surgical shock.' Torrance Thomson demonstrated ethyl chloride and ether with the Ogston mask, and the President, Dr Stuart Ross, spoke on 'The provision of an anaesthetic service'. He set out to prove the need for increasing the supply of skilled anaesthetists, and that special instruction should be given to resident housemen immediately on taking office. No hospital had the right to offer a service of skilled anaesthetists for a few hours

only in the day, since a twenty-four hour service alone could reduce the mortality rate. He referred to a substantial rise in the death rate and he dared to mention 'The increased boldness and activity of the surgeons meant the tax upon the anaesthetist's skill was greater than before'.⁵

On the subject of training, Dr Ogston President in 1927, spoke on 'Everyday anaesthesia', dealing with the teaching of undergraduates. In Aberdeen the students had to attend a minimum of four lectures, and administer a minimum of twelve anaesthetics. 'Not a very satisfactory state,' he suggested, 'but improvement seemed impossible because the curriculum is so over-loaded with subjects that most students find it difficult to give much time to anaesthetics, they are usually attending a clinic in a subject in which they have to face examination'.⁶

In May 1928 Dr Barras was elected President but tragically he was killed in a car accident two months later. Dr Ross MacKenzie, Vice-President, took over and discussed 'Post-anaesthetic sickness'. In later years, Ross MacKenzie was invited to reminisce in the first edition of our 'News Letter', and he recalled the: 'Founders and pillars of our Society: Stuart Ross was a robust man, an administrator and the author of an excellent book on practical anaesthetics, Fairlie was a man of refined character with great ability and vision. He was the perfect anaesthetist and had the complete confidence of the surgeons of Glasgow. Torrance Thomson was the scientific anaesthetist and observer. He was a philosopher and appeared to scorn the mundane things of everyday life. Napier was the genial, cynical, highly efficient secretary'

He went on to discuss situations in his practice in Aberdeen which required considerable diplomacy in handling. 'On occasions,' he wrote, 'I was reminded that the anaesthetist had no patients and that any suggestion I made regarding pre- or post-anaesthetic treatment would require to be sanctioned by the surgeon in charge and might be vetoed by him. It was a very hard, sometimes humiliating road, but today the wise surgeon is ready to hand over to the competent anaesthetist all the various responsibilities connected with the anaesthetic.'

One must appreciate his difficulties, common to others in his position, for he was the first doctor in Aberdeen to forsake general practice and concentrate on anaesthetics, rendering himself dependent financially on private practice, his hospital work being honorary. Ross MacKenzie eventually persuaded the Governors to appoint the first 'resident' anaesthetist in 1937.

Balanced anaesthesia

In Dundee in 1930 Torrance Thomson entertained his audience with 'Random reflections'. At this time anaesthetists were uneasy about the traditional methods of saturating the patients with ether or chloroform, and with the co-operation of surgeons they attempted 'balanced anaesthesia' as described by McKesson. Crile had advocated such a combination of agents in 1920; the term was coined by Lundy in 1926 when he described a combination of premedication, general anaesthesia and local analgesia. 'What we are searching for,' he said, 'is a method immediately safe, with adequate operating facilities and free from post-

operative ill effects. Surgeons have become accustomed to the flaccid abdomen of deep etherisation in which they can roam freely without troubling much about the effects of their stimuli but now, with nitrous oxide, oxygen anaesthesia, if it is to have a fair chance in abdominal surgery, the surgeon must in the first place reduce his demands regarding relaxation. Secondly, he must remember that he has a narrow zone of anaesthesia on which to draw, any extra stimulus may bring the patient outside this zone. There is still, 'he continued, 'a belief, outside Scotland, that chloroform is with us the anaesthetic of choice, comparable to the belief that we all wear kilts, subsist on haggis, porridge and whisky. It is true that most of us make a modest use of these commodities and it is true that we make a moderate use of chloroform, but in inhalation techniques ether predominates, and it is probable that in time ether will be superseded, but that may take a long time. In the meantime, we should welcome any adjuvant which lessens the quantity of ether used.'⁸

In 1931 the first lady President, Dr Winifred Wood, addressed the Society on 'Pre-medication, with special reference to rectal ether' a method she had studied under Gwathmey in America. In 1936 John Johnston of Aberdeen became President for the third time, a quite unique honour. He spoke on intravenous evipan sodium and the question of dosage demanded close attention. He described 'biological dosage; twice the sleep dose for a short operation, three times for a longer one'. The speed of the injection was important: 'If sleep is slow to come, pause before continuing'.⁹ Anaesthetists in those days, preoccupied with the clear and definite signs of ether anaesthesia as described by Guedel, were extremely worried at using a drug with no such signs.

I am indebted to Dr Johnston for leaving me copies of the early minutes of our Society and also many recorded details of deaths associated with anaesthesia in Aberdeen in the decade 1920 to 1930. He left me the Scroll presented to the original Editorial Board of the British Journal of Anaesthesia by the International Anaesthesia Research Society to show their appreciation: 'As a token of their esteem for their initiative and resourcefulness in founding and publishing this Journal for broadcasting the latest advances in anaesthesia and analgesia throughout the scientific world; and making them available not only for clinical use, but also as a permanent source of reference for progress in research, teaching and perfecting of hospital service.' It was signed by the Officers of their Board of Governors, namely: John H. Evans, Chairman; E.Klaus, Vice-Chairman and F.H.McMechan, Editor and Executive Secretary.

It is interesting to note that in 1915 a young midshipman was landed in Aberdeen from HMS Collingwood suffering from an acute appendix. Professor (later Sir) John Marnoch operated and John Johnston gave the anaesthetic. The patient was Prince Albert, later to be anaesthetised by another President of our Society, John Gillies, when he had become King George VI.

As the years passed, technique and even status improved, but the fees did not. It was a heavy responsibility for one to give up general practice and rely on anaesthetics for a living for the hospital appointments were honorary. Anaesthetists of my vintage form the last

link with the old pre-war days when we moved from open ether with ethyl chloride - and very occasionally chloroform - to nitrous oxide, oxygen and ether and spinal analgesia. My own interest in the specialty, like that of many others, was born of necessity when as housemen we were expected to cope with night emergencies.

When I worked in Eastbourne I saw at first hand the notorious Bodkin Adams.¹⁰ He was in general practice and had an appointment as visiting anaesthetist, a most undesirable character even to my young eyes. Reasonably proficient no doubt, but his real skill lay in persuading his elderly lady patients to alter their wills in his favour. You will understand that I had a close interest in his later career when, in 1957, he was charged with murder, and on reading an account of his trial it would appear that one of the expert witnesses for the prosecution, the eminent Guy's physician A.H. Douthwaite, overdid his case for the prosecution and in the hands of a crafty defence counsel, Geoffrey Lawrence, the judge, Lord Devlin, was made to feel the judgement was being taken out of his hands. Perhaps because of that Adams escaped the ultimate penalty of hanging. His activities did not inspire me to take up anaesthetics.

The hospitals in Scotland began to appoint resident anaesthetists about this time. In Aberdeen the first was in 1937 and I followed in 1938-9 under the guidance of Ross MacKenzie. Perhaps for me the great adventure in those days was to anaesthetise for a partial thyroidectomy, a simple procedure nowadays, but in those early days pre-operative assessment was minimal as was the preparation. The patients tended to be in a highly toxic state. As our surgeon, Gordon Bruce, was a skilled operator, Surgeon to the Royal Household and a close fishing friend of (later Sir) Thomas Dunhill and the physician (later Sir) Stanley Davidson, we felt we were in the forefront of this pioneer surgery. We followed the method of 'stealing the thyroid' familiar to all. The surgeons for reasons of their own did not favour the endotracheal tube and so one used the face mask devised by Hewer.

When the war came in 1939 our Society went into limbo once again, this time for eleven years. In the words of Sir Donald Douglas, a guest speaker at our Society meeting in 1975 'The average anaesthetist entered the war as a purveyor of sleep but ended it as a skilled physician of trauma'.¹¹ In my own experience, work varied from general surgery with Richard Handley, and on occasion Sir Heneage Ogilvie, urology with Ogier Ward, ophthalmology with Hyla Stallard - who became very appreciative of continuous intravenous thiopentone, maxillo-facial surgery with Michael Oldfield and Reginald Murley where one had to master blind nasal intubation and, finally, in Field Surgical Units with Tom Brownlee, Rodney Smith (later Lord Smith) and John Fairbank where one became familiar with the Oxford Ether Vaporiser,¹² and where one worked closely with Gladwin Buttles' Field Transfusion Units.

And so back to civilian life as a resident anaesthetist once more with a very much reduced salary, attending courses in Oxford, London and the Thoracic Unit of George Mason at Shotley Bridge to learn the intricacies of thoracic anaesthesia from Joan Miller. All of which fitted me to obtain an Honorary Appointment on our staff in 1946, but with no

hospital salary apart from that of the municipal hospitals and the Red Cross sanatorium. The National Health Service changed all that; one at last had security and equality which our founders had fought for so hard.

I apologise for these personal reflections but there was a gap of eleven years before the Society was reconstituted in 1950 by Drs Pinkerton of Glasgow and Gillies of Edinburgh. The Annual meetings were started at convenient places of neutrality - Dunblane, Gleneagles, St Andrews, Pitlochry, Aviemore and now Peebles.

No history of this Society would be complete without special reference to these two anaesthetists.

Dr H.H. Pinkerton, like all the others of that era started in general practice and specialised in anaesthetics. By the end of the Second World War he was well established in the Western Infirmary in Glasgow and in private practice. Those returning from the war saw in him a mentor of the highest esteem; a natural teacher, he appeared to enjoy the opportunity to train. He set about achieving a department of anaesthesia - not an easy task - but eventually his Board agreed and he was appointed Consultant in Charge. He was always enthusiastic about the welfare of this Society and he became President in 1951. He was also President of the Association of Anaesthetists. A man of infinite charm, quietly persuasive, the rebirth of this Society in Scotland after a break of eleven years was largely due to his efforts along with those of Dr John Gillies.

Dr John Gillies served in the infantry in the First World War where he won a Military Cross for gallantry. From general practice with anaesthetics in Yorkshire he came under the influence of John Hunter and Ivan Magill to learn more of his chosen specialty. From London he returned to Edinburgh in 1932 with an honorarium of £50 per annum at the Children's Hospital. Now he was dependent on the goodwill of the surgeons for private work which meant, I quote him, 'Rushing from nursing home to hospital to nursing home, lumbered with heavy equipment, a pressurised, competitive existence'.¹³ Having been appointed President-in-waiting in 1939 he at last took up office in 1950.

This rejuvenated Society now expanded rapidly in members and in enthusiasm. Apart from the Annual General Meeting, there is a Scientific Meeting and a Registrars' Meeting each year, and a Registrars' Prize is awarded. Since 1977 there has been a Memorial Lecture in honour of John Gillies. His family endowed this lectureship 'To reflect his interest in the young anaesthetist and his special concern for safe clinical anaesthesia'.¹⁴

The first Gillies Memorial Lecture was delivered by Professor (Sir) Gordon Robson in November 1978, who said 'Until curare became established in the immediate post-war years an anaesthetist's reputation and indeed his livelihood was very firmly based on his art and technical competence. Both Great Wars in this century provided a major stimulus to anaesthesia, and when the Beveridge Committee was taking evidence for its report which resulted in the National Health Service, John Gillies

was an active member of the Council of the Association of Anaesthetists, a most vital time for our future. The Association requested the Council of the College of Surgeons to set up a Faculty Joint Committee and he along with Drs Marston, Low, Bernard Johnson, Edwards and Murtagh represented the anaesthetists. When John Gillies was President of the Anaesthetic Section of the Royal Society of Medicine in 1951 he gave his famous address on Physiological Trespass.¹⁵

One must also refer to a few other stalwarts of the Scottish Society.

A.C. Forrester, the first Professor of Anaesthetics in Scotland, appointed in 1967, a charming quiet enthusiast for everything concerned with anaesthetics and this Society. What a pity men like Gillies and Pinkerton were not so honoured with a Chair, but then they truly were legends before their time.

J.D. Robertson, Professor in Edinburgh, was our President in 1964, our Jubilee year. At a meeting, held naturally in Edinburgh, he made a special plea for time for our specialty in the undergraduate course.

Donald Campbell, Professor in Glasgow, the first resident Scot to be appointed Dean of the Faculty.

Malcolm Shaw was a backbone of this Society in those post-war years; Secretary and Treasurer from 1957-63, he created the 'News Letter' in 1960 and continued to edit it until 1967. I have referred repeatedly to that excellent production. He was President in 1969.

The Society has had successful overseas trips - to Scandinavia in 1965, and to Poland in 1970. The organisation of the latter was in the hands of Donald Campbell and this surely did exercise all his talents: permits were necessary and the blessing - and indeed the patronage - of their Minister of Health and Social Welfare. We had to move about in a group, and were not allowed to split up. The hospitality, as I expected having worked with the Poles for a spell in Italy, was excellent, but one always had the feeling of being watched closely. Our young courier, well indoctrinated by the communist philosophy, never missed an opportunity to spread his gospel, but in this he failed for he was greeted with laughter when he made his final little speech: 'You Scots and we Poles have much in common, we both have our Big Brother watching over us.' When asked to explain he said: 'We have the Russians, you have the English'.

The problem of mortality has always been high in the Society's deliberations.¹⁶ After the President of 1957 - Dr Lawrie of Perth - had reviewed 'Deaths under anaesthesia', a sub-committee along with the Crown Agent initiated a new form of notification, more in line with modern practice, and again in 1977 a working party considered the reporting of such fatalities.

Now the Association of Anaesthetists has issued recommendations on monitoring patients. They say 'If anaesthetists adopted better standards of monitoring, there could be improvement in safety'. On this subject I would quote two of our Gillies Memorial Lecturers. Dr Peter

Dinnick in 1980 said there was 'A tendency to rely too much on the ECG and other unreliable monitors at the expense of simpler methods, feeling the pulse, watching the respiratory movements, etc. 'Fear God,' he said, 'keep your finger on the pulse and when in doubt give oxygen. It is sad to reflect that the causes of such deaths are, by and large, simple, and usually follow lack of observation of simple precautions and of clinical alertness. The fault, dear Brutus, lies not in our stars, but in ourselves.'¹⁷ Dr Cecil Gray in 1982 pointed out that 'Each attempt to make things easier and safer by artificial means as opposed to clinical observations brings new hazards, it may be sometimes more dangerous to take the BP frequently during short procedures than to keep the finger on the pulse'.¹⁸

When our founders met in 1914 they had a dream; a dream to promote the study and the teaching of anaesthetics and the status of the anaesthetist. And now just under 75 years later - less than the lifetime of some of us - their dream has been fulfilled. No longer, in the words of Sir Donald Douglas, is the anaesthetist 'a mere purveyor of sleep'.¹¹

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SIR ROBERT CHRISTISON'S 'A TREATISE ON POISONS'

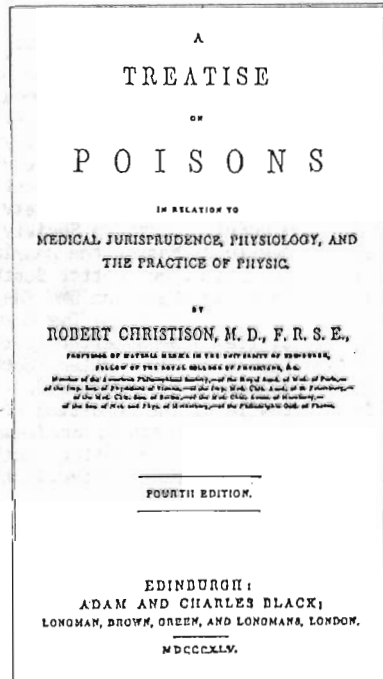
Dr J.R.Maltby

Sir Robert Christison was one of several famous 19th century medical professors in Edinburgh where he was contemporary with Simpson and Syme. He was born in Edinburgh in 1797, received his early education there, and proceeded to Arts classes at the University of Edinburgh when he was fourteen.¹

Four years later he became a medical student and graduated Doctor of Medicine in 1819. He then spent several months at St Bartholomew's Hospital in London before going on to Paris where there were unusual facilities for acquiring both theoretical and practical knowledge in chemistry. He worked in Robiquet's laboratory and attended lectures by Vauquelin and Thenard on chemistry, by Guy-Lussac on physics and by Orfila on toxicology. He was also a frequent visitor to the French Institute when discoveries were announced of the chemical composition of vegetable substances and especially on the separation and characters of the alkaloids.

While he was in Paris the Chair of Medical Jurisprudence in Edinburgh became vacant. Although Christison was only twenty five years of age, he competed for and gained that appointment. He had already received a thorough training in practical chemistry and had studied under the most distinguished toxicologist of the time. During his tenure from 1822 to 1832 the number of students in his class rose from twelve to ninety and he succeeded in producing order and precision from what had previously been confused and indeterminate.

In 1829 he published the first edition of A Treatise on Poisons which established his reputation as Scotland's leading medical jurist. Subsequent editions were the recognised standard of reference for fifty years. At the time of Christison's death, it was said that the book would always show the author's power of systematising existing knowledge, of reducing principles from judiciously considered facts acquired with much industry from a range of literature and from laborious observations, and of stating in terse lucid language



Title Page 4th Edition 1845

the results of original experiments and details of chemical processes. From 1832 until his retirement in 1877 at the age of eighty, Christison had a distinguished career as Professor of Materia Medica. In addition, he was twice President of the Royal College of Physicians of Edinburgh, in 1838 and 1846. He represented the medical profession of Scotland on the General Medical Council from 1858 until 1873, and two years later became President of the British Medical Association. For many years he was Physician in Ordinary to Queen Victoria in Scotland, and in 1871 he received a knighthood.

A Treatise on Poisons

This book went through four editions, the last of which was published in 1845. This was the year before Morton gave the first public demonstration of ether anaesthesia in Boston, Massachusetts. It is therefore this fourth edition which is of most interest to anaesthetists because it summarises pharmacological knowledge immediately before anaesthesia was discovered. A facsimile reprint of that edition was produced in the United States in 1988⁴.

The first part of the book covers one hundred pages and deals with general aspects of poisoning. This includes physiological action, symptoms, morbid analysis, chemical analysis, and animal experiments. The second part describes individual poisons and occupies nearly nine hundred pages, more than half of which are devoted to inorganic poisons. The remainder covers organic poisons, mostly from plants, and poisonous gases so that it is in this section Christison describes the pharmacological effects of drugs which were used in the first one hundred years of anaesthesia. Christison's main observations about these drugs are summarised below, although the importance of his writing is much enhanced by the many foot-note references to earlier publications on each drug.

Opium

At the time of Christison's writing, opium was one of the most important poisons for suicide, murder and to induce stupor in victims before robbing them. Several cases are reported and the tests for identifying morphia and its salts are described. It was known that opium was absorbed from the stomach, more quickly when applied to the surface of a wound, and fastest of all when injected into a vein. Although it was generally believed that opium was carried through the bloodstream to the brain there were some who thought it was conveyed along the nerves.

The effect of a small dose taken orally was initially stimulating, but this effect varied among individuals and was usually insignificant. The symptoms of overdose began with giddiness, then rapidly increasing stupor until the person became motionless and insensible. At this stage, slow respiration and contracted pupils were observed. If recovery took place, it followed prolonged sleep of 24 to 36 hours and was accompanied by nausea, vomiting and giddiness. Survival for six hours following ingestion of opium signified a good prognosis. Christison observed that the sleep of opium overdose differed from true coma in that the patient could usually be roused, but would relapse as

soon as the stimulus was withheld. This observation is frequently made today in recovery rooms with patients who have received narcotics during anaesthesia.

Opium, in the form of laudanum, was commonly used in poultices which were applied to the skin. Accidental overdoses were recorded when the skin was broken, and also through the unbroken skin. Such transcutaneous absorption of opioids for the systemic relief of pain is now gaining popularity with transdermal fentanyl.

Treatment of opium poisoning was by stomach pump and emetics. However, Christison recommended that in desperate circumstances artificial respiration should be used. He observed that the heart continued to beat for some time after breathing had ceased. He felt that it was 'not improbable that the only ultimate cause of death from opium is suspension of the respiration and that if it could be maintained artificially so as to resemble exactly natural breathing, the poison in the blood would be at length decomposed and consciousness gradually restored'.

Hyoscyamus

Medicinal doses induced pleasant sleep and in poisonous doses caused loss of speech, dilatation of the pupil, coma and delirium commonly of the 'unmanageable and furious kind'. Poisoning usually occurred from confusing poisonous with non-poisonous leaves or roots. Treatment was similar to that for opium poisoning, and the claim by an Italian that a large dose of lemon juice was an immediate antidote was dismissed by Christison as 'improbable'.

Atropine

Atropine poisoning usually occurred in September from ingestion of the black berries of the deadly nightshade, atropa belladonna. Christison described the properties of atropia crystals in detail, but did not record any medicinal use of this alkaloid. Dilatation of the pupil followed application of atropine to the skin around the eye, the surface of a wound, or following ingestion. The main symptoms of overdose were dryness of the throat, then delirium with dilated pupils followed by coma. The delirium was sometimes accompanied by uncontrollable laughter and constant talking. Convulsions were rare. Recovery was usual although occasionally delirium lasted for up to three days.

Nitrous oxide

The writings of Davy and other researchers were quoted. However, there is no mention of Davy's observation that nitrous oxide dulled the pain of an erupting wisdom tooth, nor of his suggestion that it might be used in small surgical operations. Horace Wells' use of nitrous oxide in his dental practice in Hartford, Connecticut the previous year, is not recorded.

Ether

Inhalation of ether vapour produced a strong sense of irritation in the throat, fulness in the head, and other symptoms similar to those produced by nitrous oxide. As a habitual treatment for asthma, gradually increasing doses were required, although there appeared to be no material injury with long term use. Two cases of overdose occurred when breakage of large containers of ether took place in confined spaces. There is no mention of ether's analgesic effect being observed.

Curare

Christison commented that poisons used by the American Indians were mere objects of curiosity in Europe and therefore scarcely merited discussion. Nevertheless, he quoted six authors and concluded that death occurred by suspension of the respiration. Waterton's successful use of artificial respiration in donkeys was described.

Discussion

Christison was a pharmacologist with a deep interest in research, and also a practising physician. He was therefore not looking for the analgesic or anaesthetic effects of drugs which would relieve pain in dentistry, childbirth or surgery. Nevertheless, he left us a great legacy in 'A Treatise on Poisons', by reviewing the known pharmacology when general anaesthesia was discovered.

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DEPENDENCY OF AN AMERICAN DISCOVERY ON EDINBURGH

Dr R.W.Patterson

Samuel Guthrie

On the martyr's monument in Greyfriars Churchyard, Edinburgh, the inscription 'Which Truths were Sealed by Famous Guthrie's Head', refers to a prominent Covenanter whose beheading prompted some relations to seek security in America. One of his descendants, Samuel Guthrie, in 1830, produced a novel chemical compound, chloroform. Prompt recognition of its incomparable boon was obscured by the teachings of the worldwide prevailing Brunonian theory of medicine promulgated by the authoritative centre of medical education at the beginning of the 19th century, which was Edinburgh. Perhaps Simpson's introduction of the drug into clinical practice was in some way a curious completion of a cycle that had ensured chloroform's links with Edinburgh at an earlier time.

Samuel Guthrie was essentially a product of a pioneer culture. He studied medicine as an apprentice under his father's guidance. During the winter of 1810-11 he attended a course of medical lectures in New York and again during the month of January 1815 he attended lectures at the University of Pennsylvania in Philadelphia.¹ These studies as well as his father's tutelage indoctrinated him in teachings that had reduced the classes of disease to two; sthenic and asthenic. Treatment was equally straightforward: 'The indication for the cure of sthenic diathesis is to diminish, that for the cure of the asthenic diathesis is to increase the excitement, and to continue to increase it'.² His father's legacy underlined the importance of this tradition. He left his son one dollar, the five volumes of Rush's 'Medical Inquiries and Observations', and a set of silver catheters.

Dr Benjamin Rush of Philadelphia graduated from the University of Edinburgh in 1778. In a 1790 eulogy he summarized the teachings of the school and the accomplishments of the late Professor of Medicine, William Cullen. Referring to Cullen, 'He stripped Materia Medica of most of the errors that had been accumulating in it for two thousand years and reduced it to a simple and practical science'.³ As though presaging the profound impact of his own teaching on American medical practice, Rush continued the eulogy: 'Dr Cullen is now no more. What a blank has been produced by this death in the great volume of Science! Behold! The genius of humanity weeping at his feet while the genius of medicine lifts up the key which fell from his hand with the last breath, and with inexpressible concern, cries out: to whom shall I give this instrument? Who will now unlock for me the treasures of universal nature?'³

Rush was not about to let the enlightening Scottish torch splutter out. Accepting the hypothetical abstraction 'The Principle of Excitability' as dogma and applying observable features common to the known fevers, he was able in a consistent and inexorable progression of reason to explain that all remote causes of disease (cause defined as the abstraction, or unusual application of stimuli) produced only differing 'states' of but

one disease. Treatment was accordingly simplified; if depleted of excitement, stimulants were added; if excited, heroic application of drugs and procedures designed for exhaustion of the patient were required. Rush advocated uniformity of treatment. For Rush a multiplicity of treatments to fit the individual case was not just a mistake but a form of quackery. His explicit Enlightenment-faith in the simplicity, predictability, and rationality of the universe and his Jeffersonian conviction that in real and important ways all men had been created equal, were reflected in his advocacy of a minimalist equating of one mankind, one disease, one therapy. During his long tenure as Professor of Medicine, the University of Pennsylvania graduated two-thirds of the physicians formally educated in America.

At another American medical school, Columbia in New York City, the students were exposed to the teachings of John Brown, Alexander Munroe, William Hunter and Joseph Black through the intermediary of their chemistry professor, Dr Samuel Latham Mitchill, who graduated from the University of Edinburgh in 1787. Mitchill's theory linking yellow fever contagion with exposure to nitrous oxide (published in 1795) stimulated Humphry Davy's researches into that agent.⁴

A mainstay of Brunonian therapy was the use of diffusible stimulants. Davy noted that 'the immediate effects of nitrous oxide upon the living system are analogous to those of diffusible stimuli'.⁵ This prompted him to suggest combining CO_2 , which he believed acted as a sedative, with N_2O to obtain 'a regular series of exciting and depressing powers applicable to every deviation of the constitution from health'. Davy further suggested: 'The quickness of the operation of nitrous oxide will probably render it useful in cases of extreme debility produced by deficiency of common exciting powers. Perhaps it may be advantageously applied mingled with oxygen or common air, to the recovery of persons apparently dead from suffocation by drowning or hanging'.⁵ By 1800 the use of N_2O and ether, as diffusible stimuli was recommended for resuscitation. The occasional observation of temporary or permanent unconsciousness failed to call into question the tenets of Brunonian dogma, being ascribed to 'fainting' in the former case, and to severity of disease in the latter.

A backwoods laboratory - chloroform

By 1817 Samuel Guthrie had settled in the town of Sackets Harbor on the eastern shore of Lake Ontario in upper New York State. He indulged his innate studiousness and curiosity by setting up a workshop for 'all sorts of tinkering', and a chemical laboratory for experimentations. His chemical investigations were not those of a dilettante, but were designed to solve specific needs or problems and frequently led to commercial undertakings which for the time and place were extensive and profitable. In Volume II of Benjamin Silliman's 'Yale College of Chemistry' published in February of 1831, Guthrie read that the 'alcoholic solution of chloric ether is a grateful diffusive stimulant and that as it admits of any degree of dilution it may probably be introduced into medicine'. He immediately set to work to produce this diffusive stimulant in a cheap and easy fashion and by Spring a new compound had dripped from the water-encased 'worm' of his still. In the

summer of 1831 he sent a description of his method for publication⁸ in the 'American Journal of Science and Arts', the leading scientific journal in America at the time. Benjamin Silliman, the Editor, as well as the first Professor of Chemistry at Yale College, considered the communication received from this untutored chemist to be 'honorable to the rising chemical arts of this country.' I presume it was little suspected that such things were doing in a remote region on the shore of Lake Ontario. In the fall of that year Silliman noted in his journal: 'I have written to Mr Guthrie . having been requested by some of our physicians to obtain a supply for regular use'. Numerous testimonials attested to its usefulness in various disease states without discovering its true potent attribute. Oversight must be ascribed to yet another instance wherein the significance of a pivotal fact was obscured because there was at hand a 'rational' explanation for its occurrence.

Guthrie's children were accustomed to playing in his laboratory when he was experimenting and an event which occurred to his eight year old daughter Cynthia was related in a family letter: 'He had large tubs of liquid standing on the floor and she used to stick her fingers in the tub and taste the liquid; one tub she liked to taste, so did often, and he was watching her and one day she got too much and fell over and he ran to her and picked her up and then found that the liquid in this tub put her to sleep.'⁹

It is remarkable that this astonishing event was not recognised there and then to be worthy of further investigation and exploitation, for this experimenter was accustomed to capitalizing on his observations. According to prevailing theory, unconsciousness could be expected as a complicating unwanted side effect of 'too much stimulus'. His 'true' use of his new diffusive stimulus was also recounted in another family letter; writing to his eldest daughter he recalled her need to be resuscitated from carbon monoxide poisoning: 'Dear Harriot sweet whiskey which you remember taking when suffocated with charcoal. You see it called chloroform and the newspapers are beginning to give me credit of discovering it. I made the first particle that was ever made and you are the first human being that ever used it in sickness.'⁹

During the early decades of the 19th century Rush's legacy of authoritative pronouncements served as the standard of American professional health care, though the single-minded attempt to bind mutually exclusive, individually unsolved problems into a unified whole produced an unwieldy dogma which eventually led to confusion between cause and effect of disease process, to therapeutic excesses, and to the nearly acute demise of orthodox US medicine.¹⁰ Rush's 'diffusible stimulant' standby was mercury (in toxic doses, frequently transforming the patient's disease into a mercurial disease) combined with massive doses of Mexican jalap to be followed by the 'letting' of eight to ten ounces of blood for good measure. Additionally, 'whipping' and the 'hot iron' were part of therapeutics. He believed a body could have only one disease at a time. Since he considered pain itself to be a disease, secondarily inflicting greater pain on a patient should drive the original disease from the body.

During the 1830's the public began to baulk at the harshness of standard therapy and at the pretension and power of a perceived elitist medical profession. This was the era of Jacksonian Democracy; the intellectual aristocracy that had theorized about equalitarianism was now supplanted by a de facto social and political equalitarianism which combined a celebration of the virtues of the common man and anti-intellectualism with hatred of authority and monopoly. It generated widespread distrust of professional medicine, distrust expressed most forcibly in the repeal of virtually all state medical licensing laws during the 1830's and 1840's.

Concurrent with the collapse of 'heroic practice' and the subsequent reexamination of disease cause and effect and re-evaluation of therapeutic measures, there was also a rethinking of the scientific implications of pain resulting in the antithetical view expressed by Hahnemann: 'There is nothing to cure but the suffering of the patient'. With these expansions of medical thought the way was prepared for acknowledgement of the usefulness of anaesthetic-induced reversible loss of consciousness, pain relief and Simpson's revelation from Edinburgh.

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THOMAS SKINNER

Dr P.M.Frost

The Logo of the History of Anaesthesia Society shows a Bellamy Gardner mask - one of the many varieties of the open or ether mask. This is unlike that described by Schimmelbusch in 1890, (the one that is familiar to the majority of anaesthetists) and was in use up to the mid 1960's in Wales. But the idea of a wire-framed mask had been described 30 years before Schimmelbusch's modification by a Scottish obstetrician then working in Liverpool. He was Thomas Skinner to whom we owe the invention of the open mask - yet whose name is virtually unknown.

What do we know of the man? Thomas Skinner was born in Edinburgh in 1825, the third son of one Robert Skinner. One of his elder brothers, William, known as Baillie Skinner, was later Town Clerk of Edinburgh.

Thomas was originally destined for a business career and entered an office, but in 1849 he enrolled at Edinburgh University and the Royal College of Surgeons as a medical student. He qualified in 1853 having been awarded the gold medal in midwifery, which was presented by Sir James Young Simpson - then Professor of Medicine and Midwifery and who, of course, had described the effects of chloroform in 1847. After qualification Skinner left Edinburgh for Lochmaben, Dumfries until 1855, when he returned to Edinburgh, this time as private assistant to Simpson, living in his home at 52 Queen Street.

He took the MD St.Andrews by examination in October 1857, and soon afterwards moved to Liverpool where he set up practice as an obstetrician and gynaecologist. He must have been a formidable figure in that city - assistant to Simpson himself, a gold medal winner and an MD. He was soon an active member of many societies - as early as March 1858 he read a paper defending the use of chloroform in natural labour before the Liverpool Medical & Surgical Society - a paper which was later published with a dedication to Simpson. He also actively supported a resolution debarring those who practised homeopathy from membership of the Liverpool Medical Institute.

Skinner and anaesthesia - his 'frame'

Skinner published numerous papers - some reporting cases he had encountered in Lochmaben. Then, in May 1862, he read a paper before the Obstetric Society of London entitled 'Anaesthesia in Midwifery' - with an apparatus for its safer and more economical induction by chloroform.

After lengthy support of the use of chloroform in labour, he describes his new apparatus. The idea came to him he says, on hearing of Simpson's administration of the agent by dropping it on a cambric handkerchief cupped in the palm of the hand. There were problems with not being able to see precisely where the drug was being dropped, and also of protecting the eyes. His apparatus he claimed solved both these difficulties. He describes a wire frame - 'like a fencing mask but

covering only the lower half of the face and covered with a layer of domette. For convenience it has a moveable handle and is otherwise made up so that it can be carried in the pocket or hat'. He also described a drop bottle which at one inversion delivered 'no more than 30 minims and no less than 10 minims'. There is an illustration from which it is very difficult to visualise the mask and the information that Messrs Maw of Aldersgate undertook to produce it at a cost of 11s.0d. (including a case).

It seems certain that this simple apparatus was widely used; it was used for chloroform anaesthesia at the Bethanien Hospital in Berlin until 1882 (20 years), when it was superseded by the Junkers bottle. In 1891 when Dudley Buxton investigated the use of chloroform and associated mortality, it was noted that Skinner's frame was the apparatus most commonly used. It was recommended in a text book by Probyn Williams in 1909 and appeared in a catalogue as late as 1938 - price 7s.6d.

In 1873 Skinner wrote to the British Medical Journal deploring the use of anaesthetic inhalers with a common mouthpiece - pointing out that with his apparatus a clean cover could be used each time. He did not believe that ether would ever supplant chloroform but as there were patients to whom it may have been safer to administer ether he had adapted his inhaler to suit etherisation as well. 'I shall soon give a detailed account of it and where it can be obtained.' - sadly, an account of this modification has not been discovered.

In 1890 the International Congress of Medicine met in Berlin and stressed the safety of ether over chloroform and in the same year Kurt Schimmelbusch, then assistant to Von Bergman, a pioneer of aseptic surgery, described his open mask. It is very like the Skinner frame. A drip tray was described by Rosthorn in 1897 and by Kirchoff at about the same time and eventually the Schimmelbusch mask appeared in the familiar form.

Homeopathy

The story of the remainder of Skinner's life is surprising. Sometime in the early 1870's he had a flu-like illness which left him with almost complete insomnia; several years of travel greatly improved this and after one transatlantic crossing he met a Dr Berridge of Philadelphia - a practising homeopath. He prescribed sulphur for Skinner whose condition soon improved.

In 1875 he resigned from the Liverpool Medical Institute as required by the statute which he had actively supported in 1858, gave up his flourishing obstetric practice, and became an active homeopath. With another Englishman and two Americans he founded the Anglo-American Journal of Homeopathy which survived for several years. Then in 1881, he moved to London where he soon had a large consulting practice with rooms in York Place and a large house in Beckenham, Kent.

He remained very active, travelling to Scotland for the shooting and fishing and playing golf. In 1906, he moved to Inverness Terrace in London where a few months later he slipped on a banana skin and fell.

He did not appear to have suffered any injury, but two weeks later developed abdominal pain, vomiting and melaena and died within 48 hours. He was aged 81. No obituary appeared in the BMJ or Lancet, but that in the Homeopathic World occupied no less than 23 pages - he, with two of his associates being accounted 'the 3 liveliest minds in homeopathy in this country'. His invention of the open mask received the briefest of mentions.

In his lifetime Thomas Skinner was widely respected, firstly as an obstetrician then as a homeopath, but undoubtedly his greatest contribution to medicine was the simple frame which in its many modifications was to be widely used for 100 years. The names of those who described modifications of his original frame are still well-known, and to those names can be added that of Thomas Skinner who should be better known to anaesthetists whose profession he may 'merely have touched but which he certainly adorned'. (Johnson of Oliver Goldsmith)

HIGHLIGHTS OF ANAESTHESIA IN DUNDEE

Dr S.W.McGowan

In many respects anaesthesia in Dundee developed along conventional lines. Ether was used first in 1847, but was soon entirely superseded by chloroform. Spinals had a vogue in the early 1900s. All anaesthetics were given by surgeons until 1913 when the first anaesthetist, Dr Arthur Mills, was appointed. There are however, three interesting events which are worth recording. The first event was the use of nitrous oxide in Dundee in 1836 - not as an anaesthetic agent however, but in the form of an entertaining lecture and demonstration. According to Barbara Duncum such demonstrations were popular at that time in England and America, and they culminated in 1844 in the establishment of inhalational anaesthesia.

The venue for the lecture was the Watt Institution and the lecturer was Dr Fyfe. The Watt Institution was one of the many Mechanics' Institutes which sprang up in the 1820s in the wake of the Industrial Revolution. Their purpose was to educate the working classes in basic physics, chemistry, arithmetic, etc. Dundee was an industrial town with flax mills and there was a need for skilled workers. Dr Fyfe's lecture was exceptionally popular and was repeated on two occasions. He invited seven gentlemen to come forward and inhale nitrous oxide from a silken bag. Each one reacted differently to the laughing gas, much to the amusement of the audience. If only there had been a dentist in the audience with the vision of Horace Wells, inhalation anaesthesia might have been discovered in Dundee.

My second surprise was to discover that acupuncture was successfully used by a Dundee surgeon, Dr John Crichton between 1840 and 1843. He treated not only painful conditions such as sciatica but also swollen joints (hydrops articuli) and hydroceles of the spermatic cord - with dramatic results. In 1843 he wrote 'Hydrocele, in former times requiring a painful operation, with long continued after confinement and more latterly the injection of stimulating liquors - has, in all the cases that have presented themselves this last year, been cured by acupuncture alone.'

From 1900 onwards, perhaps because of a death under chloroform and the publication of reports by various Commissions and Committees about the safety of chloroform, ether began to be used again, along with mixtures of alcohol, ether and chloroform, and ethyl chloride and nitrous oxide. The first mention of local anaesthesia appeared in the Dundee Royal Infirmary Annual Report for 1908-09 when two Bier's blocks were recorded, and 22 spinals using Stovocaine. The third event occurred in the Annual Report for the following year, 1909-1910 when, in addition to another two Bier's blocks, 35 spinals were listed - 16 with Novocaine, 10 with Stovaine, 8 with hyoscine and morphine and one with hyoscine, morphine and atropine (Figure). The apparent spinal injection of hyoscine and morphine was repeated in each of the next four years making a total of 57 cases. Today, we accept intrathecal morphine as a useful method of pain relief. But only in the last ten years have there been reports in the literature of opiates being used in man in this way.

I have searched through contemporary editions of the 'Lancet', 'British Medical Journal', 'Edinburgh Medical Journal' and the 'Proceedings of the Royal Society of Medicine', and found no mention of spinal morphine used at that time.

We do then have to consider the possibility that the injection of hyoscine and morphine was made subcutaneously in patients who were being operated upon under spinal analgesia using one of the then currently available local anaesthetic agents. Schneiderlin in 1900 had introduced the use of morphine and hyoscine before surgery, and it was in fact a popular combination before both general and spinal anaesthesia. Among its greatest proponents were Professor Kronig from Freiberg, Dr Torrance Thomson in Edinburgh and Dr R.C. Buist, an obstetrician in Dundee.

Nevertheless it is my considered opinion that the Anaesthetic Tables in the Annual Reports of the Dundee Royal Infirmary give a true and accurate picture, for these reasons: - The Anaesthetic Tables have been compiled in a most meticulous manner and in great detail. The section on General Anaesthetics separates the cases in which chloroform was given on its own from those in which chloroform was given after morphine and hyoscine. The spinal injection of morphine and hyoscine is recorded not just once but in five successive years. The spinal injection of morphine and hyoscine is listed under the heading 'Medical and Surgical Departments'. It may have been used for pain relief only, rather than for operations. Although there was no scientific basis for using opiates intrathecally many drugs and techniques were used empirically at this time. In New York, Meltzer was injecting magnesium sulphate intrathecally to produce spinal analgesia. I feel therefore that Dundee can claim the distinction of being the first centre to use morphine by spinal injection.

Acknowledgement I am grateful for the help I have received from Mr Macdonald Black - a Dundee dentist, Dr Forrest, my colleague, and Mrs Joan Auld, the University archivist.

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DUNDEE ROYAL INFIRMARY
ANNUAL REPORT 1909-10.

ANÆSTHETIC TABLE.

MEDICAL AND SURGICAL DEPARTMENTS.

General Anaesthetics.

Chloroform, ...	1,085 times.
" and Alcohol, ...	324 "
" and Ether, ...	23 "
Ether, ...	10 "
A.G.E. Mixture, ...	23 "
Ethyl Chloride, ...	53 "
Hyoscine, Morphine, and Chloroform, ...	104 "
Hyoscine, Morphine, and Ether, ...	25 "
Morphine, Atropine, and Chloroform, ...	34 "
Morphine, Atropine, and Ether, ...	96 "
Atropine and Ether, ...	3 "

Local Anaesthetics.

(a) <i>Cutaneous.</i>	
Ethyl Chloride, ...	1 "
(b) <i>Subcutaneous.</i>	
Eucaine, ...	4 "
Cocaine, ...	151 "
Novocaine, ...	20 "
(c) <i>Injection into Vein.</i>	
Novocaine, ...	1 "
Tropacocaine, ...	1 "
(d) <i>Spinal Injection.</i>	
Novocaine, ...	16 "
Stovaine, ...	10 "
Hyoscine and Morphine, ...	8 "
" " " and Atropine, ...	1 "

MATERNITY DEPARTMENT.

Chloroform, ...	86 "
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Obituary**JOHN ALFRED LEE**

FCAnaes.FFARCS.FFARCSI(Hon).MMSA.MRCS.LRCP.DA.

First President of the History of Anaesthesia Society

The British History of Anaesthesia Society mourns the loss of Dr Alfred Lee its Immediate Past, and First,President (1986-1988). British and world anaesthesia acknowledges with sadness the passing of one of the great pioneer leaders of the modern specialty, the most dramatic developments of which to date were echoed by the milestones of his own career.

Doctor Alfred Lee, a son of the manse, was born in Liverpool in 1906. He qualified in 1927 from the medical school of Newcastle upon Tyne, which was then an integral part of the University of Durham. He then held a variety of resident appointments at the Royal Victoria Infirmary and other hospitals in Newcastle upon Tyne, including some that involved the administration of anaesthetics. He was thus unusually well qualified for his generation when he set up in practice at Southend-on-Sea as a general practitioner. Many of his contemporaries would have gone straight into practice after qualification.

It is almost certainly no more than a coincidence, but a fortunate one, that like the great nineteenth century anaesthetist John Snow, who also served his medical apprenticeship in the Newcastle upon Tyne area, Alfred Lee combined general practice with the administration of anaesthesia at the local hospital. It was this beginning that, in later years, led to Southend General hospital becoming a Mecca for both trained and trainee anaesthetists.

Dr Lee continued in general practice until the outbreak of World War II in 1939, when he became a whole-time specialist anaesthetist in the Emergency Medical Service. This organisation cared for both civilian air raid casualties from the London area and wounded servicemen evacuated from the various war zones. He passed the Diploma of Anaesthetics (then the only existing qualification in anaesthetics) in 1940 and continued in the Emergency Medical Service until the organisation was disbanded after the end of the war. The first edition of Lee's famous 'Synopsis of Anaesthesia' was published in 1947 following this war service.

The inauguration of the British National Health Service (N.H.S.) in 1948 enabled Dr Lee and many other anaesthetists to become salaried consultants devoting their time exclusively to anaesthesia without having to combine it with previously financially essential private practice.

The 'Synopsis' rapidly became a best seller. It was immediately recognised as a vade mecum for anaesthetists of every seniority and nationality, both for immediate consultation in the clinical context and as a source of vital references for further reading. The book has run to ten English editions, and it has been translated officially into six other languages as well as being pirated in the Far East and elsewhere. Dr Lee was the sole author of

the first four editions. He was joined first by one, and then by two of his colleagues at Southend and continued to undertake his full share of the work involved in compiling successive editions up to the time of his sudden, though not entirely unexpected, death. He also edited or contributed to several other volumes on local anaesthesia and a history of his own hospital.

Alfred Lee retired from full-time employment in the N.H.S. in 1971 on reaching the compulsory retiring age of 65, but he continued to work and teach actively as a locum in the Southend Department and elsewhere until after his eightieth birthday. He was a superb practising clinician, always on the lookout for new ideas throughout his career. His special interests were in the field of regional anaesthesia and in pre- and post-operative management; indeed it was he who organised the first post-operative (recovery) ward in the United Kingdom and one of the earliest pre-anaesthetic evaluation clinics. He rejoiced in the performance of practical skills such as blind nasal intubation, and he actually passed his own endotracheal tube under local anaesthesia before subjecting himself to general anaesthesia for thyroidectomy.

Dr Lee's reputation as clinician and teacher drew many overseas students to Southend in addition to his established N.H.S. residents. The Department was very well organised and time was allowed for study even in the era before such concessions were either expected or usual. Many anaesthetists throughout the world have good reason to remember his teaching skills, patience, kindness and interest in their welfare and prospects with deepest affection.

Alfred Lee was President (1959) and Hickman Medallist (1976) of the Section of Anaesthetics of the Royal Society of Medicine, President (1972-3) and later an Honorary Member of the Association of Anaesthetists of Great Britain and Ireland and he was elected and re-elected to the Board of Faculty of Anaesthetists of the Royal College of Surgeons of England; he was the Faculty Clover Lecturer in 1960 and was awarded the Faculty Gold Medal in 1976. It cannot be said that he found public duties or public speaking entirely enjoyable, but he undertook them willingly, competently and successfully.

Alfred Lee received many well-deserved honours; in addition to those already mentioned, he was elected to the Honorary Fellowship of the Faculty of Anaesthetists of the Royal College of Surgeons in Ireland in 1970, he was Gaston Labat Lecturer to the American Society of Regional Anesthesia (1985), Thomas Seldon Lecturer to the International Research Society (1986) and Koller Gold Medallist and Lecturer at the meeting of the European Society of Regional Anaesthesia held in Vienna in 1984 to commemorate the centenary of the first public demonstration of the use of cocaine as a local anaesthetic.

Alfred is survived by his wife Norah after a marriage which lasted nearly 60 years; like her he was a lover of opera and they frequently attended the major festivals such as those at Bayreuth and Glyndebourne together; to her Alfred's friends and colleagues express their deep sympathy.

Dr Alfred Lee's knowledge of the history of anaesthesia, particularly that of regional anaesthesia, was encyclopaedic and made him the natural choice as the Founder President of the History of Anaesthesia Society; indeed his career spanned nearly half the modern era of anaesthesia which began in 1846, and the most dramatic period in the history of the specialty. Many will remember with great pleasure his very interesting and humorous address to the Second International Symposium on the History of Anaesthesia in 1987, in which he described his experiences as a house surgeon anaesthetist in 1927. The contributions Alfred Lee ('the King') himself made to the specialty during the six subsequent decades cannot be acknowledged adequately.

T.B.Boulton

President History of Anaesthesia Society
Senior Registrar Anaesthetist
Southend-on-Sea, 1957-8

TRIBUTE TO Dr JOHN ALFRED LEE

Dr R.A. Atkinson

Alfred Lee died on 27th April. He enjoyed a wonderful life, witnessing the evolution of anaesthetic practice from the days of the gauze mask to the present time. Moreover, he was interested in all these developments, even after retirement and right up to the last week of his life. He attended the meeting of the Section of Anaesthetics of the Royal Society of Medicine at the beginning of April and was the first to register for this meeting in Edinburgh.

Alfred was interested in all branches of the specialty, but especially in regional analgesia, extradural block and the history of anaesthesia. We are proud that he was the first President of this Society. He is, however, best remembered as the author of the 'Synopsis of Anaesthesia', the first edition of which appeared in 1947 and the tenth in 1987, something of a record in itself. He contributed many articles to the literature on historical and biographical subjects and was the British editor of the Proceedings of the First International Symposium on the History of Anaesthesia.

Dr Lee was the first President of this Society and as such played an important part in the design of the logo and tie. He was pleased that the meeting eighteen months ago was held at Southend. Always a good supporter of meetings at local, national and international levels, he was often to be seen in the hospital library and visited the offices of the Association of Anaesthetists in the week of his death.

It is not possible in this address to mention all his achievements. Suffice it to say that he made contributions to all our national bodies. He was a member of the Board of Faculty and was awarded the Faculty Medal. He was President of the Association of Anaesthetists and before that Assistant Editor of 'Anaesthesia' and Chairman of the Editorial Board. It is now 30 years since he was President of the Section of Anaesthetics of the Royal Society of Medicine in 1959. He has also received the Hickman Medal. Foreign honours include the award of the first Carl Koller Medal of the European Society of Regional Anaesthesia on the occasion of the centenary of the first use of local analgesia in Vienna and the invitation to deliver the Gaston Labat Lecture to the American Society of Regional Anesthesia.

What of the man? He was acclaimed as a teacher, and took particular interest in overseas graduates. Indeed, he was in Thailand at the beginning of this year. Repected for his wisdom, he was also known for his absolute integrity and for his humility. He was a loyal friend and there must be many in this room who have received a little note of encouragement or thanks following some service or contribution.

We have lost a great man.

CRAWFORD W. LONG SESQUICENTENNIAL MDCCCXLII - MCMXCII



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