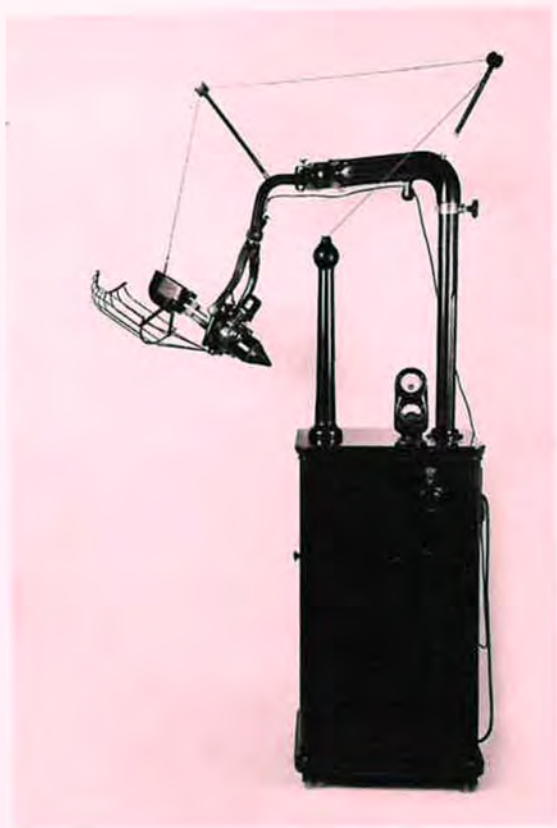


DENTAL HISTORIAN



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Dental Historian

Persons wishing to submit papers for publication (ideally as an email attachment or on disc) should send them to Dr Gordon Watkins, editor *Dental Historian*, gordonwatkins@me.com, or to 2 Green Fall, Poringland, Norwich. Norfolk NR14 7SP

Dental Historian is sent free to members. Non-members wishing to purchase a single issue can do so by sending a cheque for £12 sterling made out to the Lindsay Society for the History of Dentistry to the Distribution Manager, Dr G Garnett, Hey Barn, Back Lane, Newton-in-Bowland, Clitheroe, Lancs, BB7 3EE.

EDITORIAL

So we reach my final editorial, after twelve issues in six years. As always this issue covers a wide range of topics. First is the 2011 Lillian Lindsay Memorial Lecture, on the treatment of oral pain through the ages. Then accounts of two dentists: Matthew Cole Yeo and the Baron Ver Heyden de Lancey. There are *memoires* of two dental schools - Belfast and Cardiff - and the New Cross School for Dental Auxiliaries, as well as the fascinating story of a chair at the Bristol school. We can also read about scurvy in mariners and of a 19th century lady dentist, Mrs Roper. Finally there is news from the Lindsay and Henry Noble Societies, as well as a report on a Dumfries symposium on dental education. All the authors are thanked for their well-penned contributions.

Much gratitude is due to the following, amongst others, for their help and encouragement over the years: Geoff Garnett, Robin Basker, the late Ian McIntyre, Stuart Robinson, Stuart Gaddes, John Craig and Gordon Watkins; Rachel Bairsto, Melanie Parker and Sophie Riches of the BDA Museum; and Roger Farbey, Helen Nield and other staff in the BDA library. And many thanks go to Wesleyan Medical Sickness for its continued support.

And so I get to the end. It is time to hand over to my successor, Gordon Watkins, to whom I extend my very best wishes for a successful and happy editorship..

FRONT COVER: RITTER X-RAY MACHINE

Sophie Riches¹

X-rays were first discovered in 1895 by Wilhelm Conrad Roentgen. Soon after Otto Walkoff, a German dentist produced the first dental radiograph of his own teeth. Reiniger, Gebbert and Schall produced the first dental x-ray unit, the Record, in 1905. The unit on the cover is a Ritter Model A x-ray machine produced by the Ritter Dental Manufacturing Company Inc. in 1920. It has a wooden main body and extendable arm. The main body contains two Ritter gauges, a handheld time control unit and there is a Coolidge Radiator Dental Type x-ray tube on the extendable arm. A high voltage wire ran outside the arm from the transformer cabinet to the x-ray head. Patients and the operator had to stay at least 12 inches away from this wire at all times. The first safe machine, the CDX unit, where all the high voltage elements were insulated in electrically grounded housing was not introduced until 1923. It was manufactured by the Victor X-ray Corp of Chicago. Throughout the 1920s the dentist with an x-ray machine in their surgery was an exception but by the 1930s the majority of dentists either owned an x-ray machine or had access to one.

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TREATMENT OF ORAL PAIN THROUGH THE AGES*

Tara F Renton†

Lilian Lindsay (1871-1960)

Lilian Murray was educated at Camden School for Girls. Her father died when she was only 14-years-old. She became apprenticed to a dental practitioner for 3 years until 1892, after the dean of the National Dental Hospital in Great Portland Street, London refused her entrance. Lilian went on to be accepted by Edinburgh Dental Hospital as the first, and at that time the only, female dental undergraduate in the UK. She qualified LDS Edin with honours in 1895, the first British woman to have a formal dental qualification.

After marriage Lilian Lindsay practised with her dentally-qualified husband Robert whom she met as a fellow undergraduate. They remained in Edinburgh until he was appointed BDA secretary in 1920, which meant them moving to a flat above its then HQ at 23 Russell Square.

Lilian started the BDA's library and museum on a limited budget, taught herself German, French and Latin to study and obtained dental/medical books from Europe, developing a fascination with the history of both professions.

Following the death of husband in 1930, she became sub editor of the *BDJ* for the next 20 years, during which time she championed the cause of women in dentistry.

Many honours came her way including: 1946, first woman president of the BDA; 1946, CBE and LLD at Edinburgh University; 1950, president Section of History of Medicine at the RSM; 1953, honorary member of American Academy of Dentistry; 1959, honorary FDS Ed.

Sensation and pain

The Greek goddess of revenge, 'Poine', was sent to punish the mortal fools who had angered the gods. This gave us our word *pain*. Many ancient cultures believed pain and disease were punishment for human folly resulting in many 'pain inducing rituals in ancient cultures'.

Definitions of the commonly used terms were derived before researchers had determined differential pain and sensory pathways. 'Anaesthesia' was coined by Oliver Wendel Holmes, Sr (1809-1894) in 1846 from the Greek *an-*, *an-*, "without"; and *αἴσθησις*, *aisthēsis*, "sensation". It refers to the inhibition of sensation. 'Analgesia' (direct Latin translation of *an*, without *algēsia* or pain) is the

absence of pain; but theoretically could have concomitant non-painful sensation, for example touch and thermal.

So what is pain? It is defined as "an unpleasant sensory and emotional experience associated with actual or potential tissue damage or described in terms of such damage".¹ This is an over-simplification of the complex, entirely subjective, sensation with physical and psychological effects. The initial sensation (nociception = sensation of pain) is adjunctive to the affective reaction to pain (anxiety, stress, fear) which then leads to behaviour as a result of the pain 'experience'.

Pain experience is dependent upon age, gender, ethnicity, culture, pain experience, personality, stress, depression and anxiety. Various settings can affect your pain levels including whether you are stressed, anxious and or tired, whether you trust in your clinician. It is known that soldiers in military zones have higher pain thresholds in combat than off duty; and rugby players continue to score tries even having just sustained a fracture during a tackle.

Pain can be caused by organic and psychological causes. Herta Flor's pain psychology group in Mannheim have eloquently shown with MRI studies in man² that a significant vascular activity in reaction to pain is initiated due to the affective components of pain rather than the physical nociceptive process.

Measuring pain is near impossible. Pain experience is an entirely individual response. No other person can derive your own experience of pain because you alone experience it; and due to its complexity, conveying your total pain experience to others is impossible. Unless your clinician is equipped with Dr Spock's (from *Starship Enterprise* not paediatrics) ability to key into your experience using bi-temporal palpation, sharing your pain experience will depend upon your clinician's talent for listening and empathising that may, in part, allow him/her to begin to understand your pain. We attempt to gain an idea of the affective component of your pain experience using questionnaires for psychometrics and we use questionnaires to assess your functionality, disability and behaviour. Scoring pain using a Lickert scale³ is standard but it massively over simplifies the complex pain experience.

The mechanisms of pain

Historically pain was considered a punishment and deserved. Most people dealt with pain using some derivative of opium (first reported c5000 BCE). *Opium* is a Middle English word (c1100-c1500 AD) of Greek origin that passed through Latin into English. *Opium* is a diminutive of the ancient Greek *opos*, or milky juice of plants. Few reports of attempts were made to understand the mechanisms of pain. Galen (129-216) was the first to describe a network of nerves leading to the brain. Later Mairnonides (1138-1204), a Spanish philosopher residing in Egypt, reported

* Lilian Lindsay Memorial Lecture 2011 delivered at the BDA Annual Conference, Manchester, 21 May 2011

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¹ Defined by the International Association of the Study of Pain: a huge organisation to which any clinician or basic scientist with an interest in pain belongs. <http://www.iasp-pain.org/Content/NavigationMenu/GeneralResourceLinks/PainDefinitions/default.htm>

² H Flor and M Diers, Review, *NeuroRehabilitation* 2009; 25:19-27.

³ J S Uebersax, 2006, *Likert scales: dispelling the confusion*, John Uebersax Enterprises LLC, retrieved 10 August 2010, <<http://www.john-uebersax.com/stat/likert.htm>>.

that "Galens art heals only the body but Abou Amrans (Mairnonides) heals the body and soul". Later Descartes (1596-1650) was the first to state that pain was experienced in the brain, rather than in the heart as the accepted Aristotelian doctrine.

Patrick Wall and Ron Melzack's 1965 gate theory of pain⁴ was a breakthrough, based on our better understanding of pain pathways in man. Over the past 50 years our physical knowledge of the mechanical pain pathways in man has significantly increased. We now understand that specific and general receptors and transmitters at the primary, secondary and tertiary sensory neuron interface play a role in regulating pain. We understand that the key primary sensory nerves transmitting painful stimuli are A Delta (cold and pain) and C fibres (warm and pain). They synapse with the secondary order sensory neurons a specific region of the spinal cord (Lamina I of the Dorsal Root Ganglion). These secondary order neurons convey pain to the contra-lateral tertiary sensory neurons in the sensory cortex. Other specific areas of the brain play a role in pain although their roles are not yet fully understood (thalamus, anterior cingulate cortex, insula and brainstem). However our comprehension of the mechanisms behind the complex peripheral and central nervous system interaction has only just begun. Translational research methods including functional MRI, biomolecular and genetic assays are rapidly improving our ability to research these mechanisms in man. Psychometric studies (social, illness behaviour, psychological distress, beliefs and attitudes, personality traits, drug abuse) will enhance our understanding of the affective components of pain.

The issues specific to trigeminal pain include the problematic impact on daily function. By nature of the geography of the pain (affecting the face, eyes, scalp, nose, mouth) interference with just about every social function we take for granted is significant. The trigeminal nerve is the largest sensory nerve in the body representing over 50% of the sensory cortex. It is no wonder that pain within the trigeminal system in the face is often inescapable.

Dentistry is inextricably linked with pain. St Apollonia, the dental patron saint, was tortured and had her teeth knocked out as she refused to rescind on her Christianity. Any dentist meeting a new acquaintance will be familiar with that look of fear and apprehension on some people's faces when you reveal your profession. This link is reinforced throughout history in art and literature. Many quotes about toothache reaffirm the unpleasantness of dental pain:

Toothache "can be counted among the greatest of torments" (Celsus, 25 BCE);
For there was never yet philosopher that could endure the toothache patiently"
(Shakespeare, Much Ado About Nothing, Act VI).

Up until relatively recently, many poor patients underwent surgery, eg amputations at war and dental extractions, without modern day analgesia and anaesthesia. Surgery was a last resort for everyone and the pain experience was generally managed with straps, alcohol, opium and or herbs.

⁴ R Melzack and P D Wall, Pain mechanisms: a new theory. *Science* 1965; 150: 971-979.

Roles played by dental professionals in the development of local and general anaesthesia for modern surgery

"The time for extracting a dental lesson from history is ever at hand for dentists who are wise".⁵

Before modern anaesthesia, surgery was a terrifying and last resort, a final attempt to save life. Few operations were possible and surgeons were judged by their speed whilst plying their restrained patients with alcohol, opium or other herbal remedies. Incredibly the profession of anaesthetist was only established in the 1920-30s, a relatively recent event. Some patients luckily fainted from the agony and many patients died. The development of the ability to produce volatile gases including ether and nitrous oxide began the 'black era of surgery', where by surgery could be undertaken with near abandon with many patients bleeding to death or succumbing to infections postoperatively. With lack of antibiotics and sterile techniques many patients went on to develop post-surgical sepsis leading to a prolonged and painful death.

Interestingly and not surprisingly dentistry and surgery 'blossomed' alongside the development of anaesthesia and analgesia. By 1800 there were still relatively few 'dentists' practising their profession. By the middle of the 19th century their number had increased markedly, although there was no legal or professional control to prevent malpractice and incompetence. Pressure for reform of the profession increased. The introduction of anaesthesia had a dramatic effect on dentistry. Alongside ether and chloroform, nitrous oxide became the most preferred option and most surgeries were equipped with general anaesthetic equipment by the end of the century.

In 1799 the English chemists John Priestley⁶ and Sir Humphry Davy synthesised nitrous oxide and ether. The ability to manufacture these gases led to their abuse by partying upper classes: 'ether frolics' were referred to by the poet and chemist Sir Humphry Davy,⁷ in the 1800s. Crawford Long, a surgeon at Jefferson Georgia, was the first to report the analgesic effects of ether inhalation in 1849 and its use for a dental extraction.

On 19 December 1846 Francis Boott, an American botanist who had heard the news from Boston, watched dental surgeon James Robinson⁸ administer the first ether anaesthetic in England. Two days later, Robert Liston operated on Frederick Churchill for a mid-thigh amputation at University College London Hospital.

⁵ Demosthenes www.namibiadent.com/History/HistoryDentistry.html

⁶ J Priestley, Observations on different kinds of air, *Philosophical Transactions*, Royal Society of London 1772; 210-224.

⁷ H Davy, *Researches, chemical and philosophical, chiefly concerning nitrous oxide*, London: J Johnson, 1800.

⁸ There is an English Heritage 'blue plaque' on the wall of Robinson's residence at 14 Gower Street, London.

Figure 1 Key Figures in the development of anaesthesia



Gardner Quincy Colton was a flamboyant showman and lecturer on natural philosophy, chemistry and the telegraph who failed to complete his medical studies.⁹ He earned up to \$535 per public demonstration of nitrous oxide inhalation. One demonstration in 1844, in Hartford Connecticut, involved Samuel A Cooley. Whilst under the influence he sustained a significant injury to his leg without noticing it. This was witnessed by Horace Wells, a Connecticut dentist. He immediately seized upon the significance of this apparent analgesic effect of nitrous oxide.¹⁰ On the following day Wells' offending molar was extracted in his office by his partner, dentist John Riggs (1810-1885). Gardner Colton presided as anaesthetist. Wells began to administer nitrous oxide to his patients, successfully performing several dental extractions over the next couple of weeks.

William T G Morton, a dental student at the time, arranged for Wells to demonstrate his technique for dental extraction under nitrous oxide anaesthesia at Massachusetts General Hospital, in conjunction with the prominent surgeon John Collins Warren. His demonstration place on 20 January 1845 ended in failure when the patient cried out in pain in the middle of the operation. Wells was laughed out of the lecture theatre and the session was declared as "humbug" by attendant senior surgeons. After this disgrace Wells gave up dentistry and became a travelling salesman, for the next two years selling canaries, shower baths and other household items.



Figure 2 English Heritage Blue Plaque tribute to Dr James Robinson, pioneer of anaesthesia, on the house where he lived

In November 1847 James Simpson, professor of obstetrics in Edinburgh, introduced chloroform. It was more potent than ether but could have severe side effects such as sudden death and late onset severe liver damage. By the 1850s ether and later chloroform became the most commonly used anaesthetics for surgery, but achieved only limited popularity among dental surgeons.

⁹ G Smith and N Hirsch, Gardner Quincy Colton: pioneer of nitrous oxide anaesthesia, *Anesth Analg* 1991; 72: 382-391.

¹⁰ W H Archer, Life and letters of Horace Wells, discoverer of anaesthesia, *J Am Coll Dent* 1944; 11: 80-210.

Figure 3 Key dental figures in the development of anaesthesia



In 1847, he left for Paris after being given a demonstration on anaesthesia by his now prosperous former partner William Morton. Wells' pioneering investigation and public demonstration of the anaesthetic properties of nitrous oxide led to him being proclaimed the official discoverer of anaesthesia by the Paris Medical Society in 1847, by the American Dental Association in 1864 and the American Medical Association in 1870.

Some time after returning to the United States, Wells became addicted to chloroform. At that time the effects of sniffing chloroform and ether were not known. In January 1848 Wells self-experimented with chloroform for a week. He became increasingly deranged. One day, a delirious Wells rushed into the street and threw sulphuric acid over the clothing of two prostitutes. He was committed to New York's infamous Tombs Prison. As the influence of the drug waned, Wells' mind started to clear. In despair, he realised the horror of what he had done. Wells requested the guards to escort him to his house to pick up his shaving kit. He then committed suicide, slitting an artery in his leg with a razor after inhaling an analgesic dose of chloroform to blot out the pain. Wells is buried at Cedar Hill Cemetery in Hartford, Connecticut.

After the failed public demonstration of nitrous oxide anaesthesia for dental extraction, Colton headed to California during the gold rush. He didn't strike it rich, although his brother Walter was Civil Governor of state. Colton returned east in 1863 to set up the 'Colton Dental Association', with multiple offices devoted exclusively to the removal of teeth under nitrous oxide general anaesthesia. Colton reported over 100,000 cases using 100% nitrous oxide with a low incidence of side

effects and no reported fatalities. Apparently, the extremely brief duration of the dental extraction procedures allowed the patients to experience minimal morbidity from the hypoxic concentrations of nitrous oxide administered. Colton attended the first International Congress of Medicine in Paris.

After 1868, Chicago surgeon Edmund Andrews (1824-1904) began to combine nitrous oxide with 20% oxygen, which prevented asphyxia and permitted prolonged anaesthesia. The popularity and reputation of nitrous oxide recovered in hospital surgery as well as dentistry.

William T G Morton, studied at the world's first dental school, Baltimore College of Dental Surgery, but left without finishing his degree. In 1844 he became a student at Harvard Medical School, but again did not finish his studies. However, at Harvard he attended the lectures of Professor Charles Jackson who, in 1844 demonstrated that inhaling ether caused unconsciousness. On 30 September 1846 Morton administered diethyl ether to Eben Frost, a music teacher from Boston, for a dental extraction. Two weeks later Morton became the first person to publicly demonstrate the use of diethyl ether as a general anaesthetic at Massachusetts General Hospital, in what is known today as the Ether Dome.

In 1852 Morton was granted an honorary doctorate by the Washington University in Baltimore. He petitioned the US Congress three times for recognition of his priority and rights to the profits derived there from. Morton even managed to secure an interview with the fourteenth President of the USA (1853-57), Franklin Pierce, to press his case. However he was unsuccessful and his nemesis, Professor Jackson, gained the rights. At the age of 48, Morton died suddenly of "congestion of the brain", probably a cerebral haemorrhage. Deeply in debt, he had travelled to New York City in the middle of a deadly summer heat wave. Morton had been outraged to read an article in the *Atlantic Monthly* that credited the invention of etherization to Professor Jackson. He outlived his student but died in an asylum, insane.

Henry Isaiiah Dorr worked as a dental apprentice whilst saving to study medicine. However his savings grew so slowly that a prosperous dentist persuaded him to accept financial assistance on the condition that Dorr abandon his plan to study medicine and take up dentistry instead. He enrolled as a dental student at Harvard and, following his graduation, practised dentistry for several years. His ambition to become a physician was realized when he graduated from Jefferson Medical College at the age of 39.

In 1910 Dorr retired as a successful dentist and offered Harvard \$2,000 a year - the income from a \$63,000 gift - to establish an endowed chair devoted to research and teaching in anaesthesia at Harvard. Dorr described his use of nitrous oxide and oxygen anaesthesia, adding an excerpt from a local newspaper column:

Many experiments have been made in the use of anaesthetics, but none has been so successful as the one which took place at the Philadelphia Dental College last Friday afternoon. This was the first operation with nitrous oxide gas in combination with oxygen for an anaesthetic for short surgical operations.

The column continued: The patients under this combination of gases ... do not exhibit the excitement or groaning as when under the influence of nitrous oxide or other administrations. The lips retain their usual colour and the patients experience but little acceleration of the pulse. The duration of the anaesthetic is longer and the operation for the administration is quite simple. It is a very recent importation from

England and as this is the first use of it in the United States, Philadelphia scientists have displayed a great amount of interest.

Dorr was apparently unaware that Edmund Andrews had administered oxygen with nitrous oxide in Chicago 15 to 20 years earlier, in 1868. Nevertheless, it was an interesting and noteworthy accomplishment. What other scientific, medical, or dental contributions Dorr may have made, are undocumented. His obituary in the Winchester, Massachusetts newspaper stated he had authored several books on anaesthesia.

Thomas Evans, an American dentist practising in Paris, had begun using nitrous oxide in Europe. Thereafter, Evans introduced the concept of compressing the gas into a liquid form to provide ease of transportation and storage.

Other important innovations leading to modern anaesthesia

- The de-oxygenation during anaesthesia was partly overcome by Edmund Andrews of Chicago who, in 1868, gave it with 20% oxygen. Paul Bert of Paris gave it under pressure 10 years later in 1878.
- Sir Frederick Hewitt introduced the first practical anaesthesia machine capable of delivering both nitrous oxide and oxygen in 1897.
- The first major war in which anaesthetics were used was the Crimean War of 1854-1855.
- Boyle machine appeared in 1917. In the 1930s the appearance of Bromethol (Avetin), Divinyl Ether, Cyclopropane and Trichloroethylene, and the induction of anaesthesia by intravenous barbiturates, were innovations.
- During the first world war, Sir Ivan Whiteside Magill (1888-1986) worked at the Queen's Hospital for Facial and Jaw Injuries in Sidcup with plastic surgeon Sir Harold Gillies (1882-1960) and anaesthetist E Stanley Rowbotham (1890-1979). Magill developed the technique of awake blind nasotracheal intubation allowing passing of the endotracheal tube with limited opening for maxillary surgery.
- The Laryngeal mask airway invented in the 1980s allowing lighter anaesthesia as the patient doesn't have to be paralysed to pass the endotracheal tube past their vocal chords.
- Propofol has effectively replaced opiate based induction agents a safer, short lasting non toxic induction.

Local anaesthesia

Historically there were many attempts at providing regional analgesia or anaesthesia using various methods. Ligature LA was used by the Romans. In the 16th and 17th centuries, surgeons dealing with amputations used it: in 1564 the military surgeon Ambroise Paré (1510-91) noted that a tourniquet "much dulls the sense of the part by stupefying it: the animal spirits by the straight compression being hindered from passing in by the nerves". The first recorded appearance of local analgesia as a separate concept is due to Sir James Young Simpson in a review of alternatives to ether anaesthesia. A British physician, in 1884 he wrote:

In dental practice cocaine will probably prove itself of service, as there are many less severe tests of a patient's fortitude than the extraction of a tooth. The mode of application is either to employ a solution in alcohol of one in five or stronger, painting the gum, or to inject the submucous or subcutaneous tissue with a solution.

Cold LA was reported by Hippocrates (born c.460 BCE):

Swellings and pains in the joints, without ulcerations, those of a gouty nature, and sprains are generally improved by a copious infusion of cold water ... for a moderate degree of numbness removes pain.

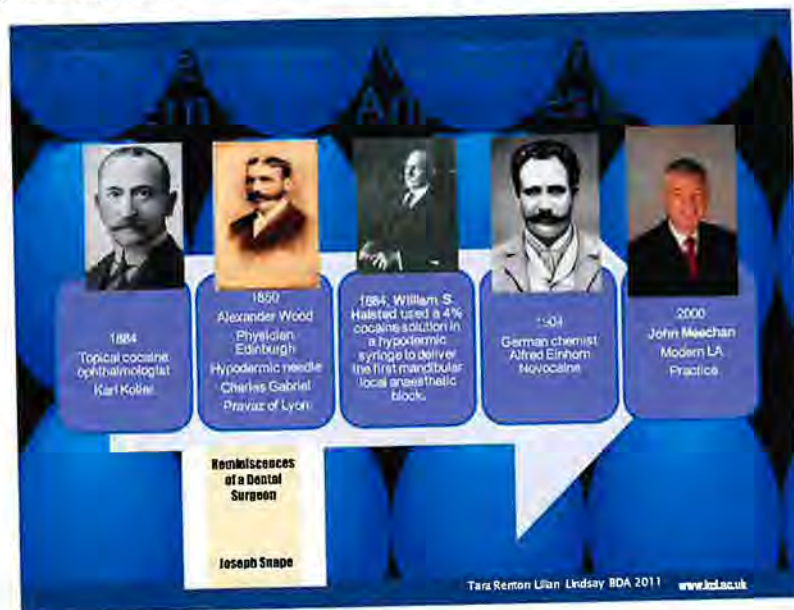
Avicenna used sips of ice-cold water to numb a tooth and gum before surgery. In the Old English *Lacnunga* (c.1000) there is a recipe: to treat an abscess, "let him sit in cold water till it be numb". In the 1850s, British surgeon James Arnott was concerned by the fatalities associated with the early days of ether and chloroform anaesthesia, admittedly then a very hit-and-miss procedure, and he repeatedly promoted refrigeration as much safer:

In all superficial operations, which constitute the immense majority, cold is superior to chloroform in the circumstances of safety, ease of application or the saving of time and trouble, certainly of producing anaesthesia.

Cold dental LA was reported in 1946 by an American dentist, J S Restarski. He described a quite horrendously uncomfortable-looking apparatus for delivering refrigeration anaesthesia to the jaws of naval personnel (who presumably were not in a position to say "no"; they'd rather have Novocaine, thank you!

The 18th century saw great interest in the newly-discovered powers of electricity. The application of electric shocks in the cause of local analgesia became very popular. In 1786 Charles Bew, surgeon-dentist to George IV of England, felt that *tic douloureux* (an extremely painful condition) was chiefly caused by dental problems. He recommended removal or modification of the defective tooth, or correction of the articulation of the jaw. He used supportive electro-therapy to help manage the pain, giving powerful electric shocks from an electrostatic generator and Leyden Jar capacitor, perhaps the modern predecessor to TENS or peripheral neural stimulation now used for chronic pain.

Figure 4 Key figures in the development of local anaesthesia



In 1868, W W Green, a professor at the Maine Medical School, made a subcutaneous injection of from a half to one grain of morphine while the patient was under ether. He wrote this injection would help in "preventing shock, shortening the anaesthetic influence and in preventing delirium and nausea". In 1884 William Halstead, also a leading general surgeon, delivered the first mandibular block however (1892) K Schleich surgeon pioneer of infiltration anaesthesia and H Braun is credited for the addition of epinephrine (1900).

In 1853 by the invention of the hypodermic syringe, with its hollow pointed needle local anaesthesia became possible. Credit for the evolution of this universally useful appliance is usually given to Dr Alexander Wood (born 1817), who was appointed secretary of the Royal College of Physicians of Edinburgh in 1850. For some time, Wood had been experimenting with a hollow needle for the administration of drugs. Eventually, he felt confident enough to publish in *The Edinburgh Medical and Surgical Review* a short paper, 'A new method of treating neuralgia by the direct application of opiates to the painful points'. He showed the method was not necessarily limited to the administration of opiates. At about the same time Charles Gabriel Pravaz of Lyon made a similar syringe which quickly came into use in many surgeries under the name of 'The Pravaz Syringe'. Sadly the first recorded death due to IV overdose of morphine was Wood's wife, who had become addicted to morphine.

The development of injectable morphine and cocaine led to problems. Later, in the American Civil War (1861-65), an estimated 400,000 soldiers became addicted to opiates after liberal use of morphine injections as well as opium pills:

The returning veteran could be...identified because he had a leather thong around his neck and a leather bag (with) Morphine Sulphate tablets, along with a syringe and a needle issued to the soldier on his discharge...This was called the "Soldier's Disease".

Dentists were increasingly warned to be on their guard since they often used cocaine in treating and extracting the teeth, and were frequently alone with their patients. They soon made it standard practice to have a nurse or assistant present when an anaesthetic was administered. Bizarre effects of the drug were apparently widely experienced. A dentist in Shawnee, Oklahoma, in 1899 gave a woman an injection of cocaine: she became erotically excited and behaved "in a most unseemly way, although her usual conduct was modest and becoming".

The developments of modern local anaesthetics

In 1884 Sigmund Freud asked Viennese ophthalmologist Dr Karl Koller to work with coca leaves. Eye operations often needed a conscious, awake subject. Before the advent of local anaesthesia, such operations were fiendishly difficult for the surgeon and profoundly distressing for the patient. Koller published his first paper on the use of cocaine as a local anaesthetic in 1884. He described instilling a 2 per cent aqueous solution into the eyes of rabbits and dogs, causing insensitivity to painful stimuli in as short as 30 seconds. He then tried it on his own corneas and those of friends with similar results.

Other key developments include;

- Synthesis pure cocaine 1891
- Synthesis of the first amino esters LA 1891-1930
- Synthesis of the first amino amide LA 1898-1972. Procaine, the first effective and tolerable local anaesthetic, was synthesised in 1905. A vasodilator, it caused a profound drop in blood pressure. A number of deaths occurred after infiltration anaesthesia. This was overcome by combining the procaine with epinephrine. In the beginning, tablets of procaine hydrochloride were sold to the profession. In the early days it was at the ratio of 1 to 20,000, but in time, the standard became 1 to 200,000. In the beginning, tablets of procaine hydrochloride were sold to the dental profession. The dentist would crush the tablet in a spoonful of distilled water and heat it over an alcohol flame to help it dissolve.

In 1914 sterile ampoules of Novocain in solution were introduced, followed by a major advance in 1920 when Dr Cook got the idea for an anaesthetic cartridge. It which became commercially available in 1921. John Meechan and his team¹¹ continue to push the boundaries introducing methods by which one can avoid inferior dental blocks and modernising LA dental practice. John's work in Dental LA has recently been recognised by an Innovation award

¹¹ J G Meechan, A A Jaber, I P Corbett and J M Whitworth, Buccal versus lingual articaine infiltration for mandibular tooth anaesthesia: a randomized controlled trial. *Int Endod J* 2011; 44: 676-81; doi: 10.1111/j.1365-2591.2011.01878.x. Epub 2011 Mar 30]

Sedation and relative analgesia

In the 1930's Stanley Drummond Jackson, a dentist practising in Yorkshire, experimented with new intravenous anaesthetic drugs introduced from Germany and America. By trial and error he developed a method of intravenous anaesthesia that worked to provide fast onset. Dr Henry Mandiwall was a consultant oral surgeon and an accomplished film maker. Together they made a film on venepuncture techniques for general practice.

A Dr MacIntosh gave an anaesthetic in the Mayfair dental practice to Sir William Morris (of motor car fame) for dental treatment. As a result, Morris was so impressed with his anaesthetic that he sponsored Oxford University to establish the first department of anaesthetics in Europe. Sir Robert MacIntosh became the first professor of anaesthesia in Europe.

The divisions between the dental and medical professions came to a head when the *British Medical Journal* published a 1969 paper on by Drummond Jackson on the use of intravenous methohexitone.¹² But the authors and his technique were castigated in the journal. 'DJ' asked the *BMJ* to publish a statement of withdrawal. It did not occur so he sued for libel. The legal case became the longest libel action in British legal history. The case was never completed as the judge recommended each party admonish the other for all blame and agree to disagree.

In 1971 the government proposed a ban on the practice of operator-anaesthetists in dentistry. The 1978 Wylie Report¹³ was subsequently adopted by the General Dental Council. It today remains almost unchanged as the accepted definition of conscious sedation. In the 1990s the Department of Health sponsored a guidance document on anaesthesia sedation and resuscitation: *The Poswillo Report*.¹⁴

Origins of commonly used drugs in dentistry for managing acute post-operative pain

Many interesting remedies for toothache have been suggested in the past. Celsus recommends a decoction of the root held in the mouth but not, he cautions, swallowed,¹⁵ and for the same reason, from very early times the roots, dried, were made into anodyne necklaces/ rattles for babies for teething:

To Make Children's Necklaces for the Teeth: take roots of henbane, of opium and vervain, and scrape them clean with a sharp knife, cut them in long beads and

string them green.....till it is the bigness of the child's neck. Then take as much red wine as you think the necklace will take up and put thereto a dram of red coral, and as much single peony root, finely powdered. Soak the beads in this for 28 hours, and rub the powder on the beads, and when red and dry, let the child use them.

Very little progress has been made in the modern development of novel analgesics. Opium has been recorded for the use for pain since 5000BCE. Opiates, Tylenols and salicylates have been used for centuries and their historical summary is beautifully illustrated by a website, 'A brief history of pain relief'.¹⁶

Despite their longevity we have very limited knowledge on how they work. Non-steroidal anti inflammatory drugs (NSAIDs) act peripherally by blocking cyclo oxygenase. Similarly paracetamol blocks peripheral pathways and centrally but the mechanisms remain unknown. Opiates centrally block the NMDA receptors centrally. Local anaesthesia blocks all sodium nerve channels (both motor and sensory) and sedative agents (benzodiazepams) block centrally the GABA receptor pathway- inducing anxiolysis.

Best practice for the provision of post surgical analgesia includes NSAIDs (Ibuprofen soluble) combined with paracetamol as they have a synergistic effect taken together.¹⁷

Current and future research

Our future ability to manage both acute and chronic pain does require significant improvement. Many of the drugs we use today are based on chemicals identified between 5000 BCE and the late 1800s. The only recent enterprises in developing novel analgesics have resulted in unwanted systemic consequences; for example Cox II inhibitors resulting in cardiovascular complications and TRPV1 (vanilloid receptor) antagonists causing hyperthermia in early trials.

The genetics of pain, a field that has rapidly expanded in the past 5 years, has resulted in several candidate genes being identified for pain perception, catastrophising, fear of pain and many others. Unravelling the significance of individual gene array changes on this complex process will be a challenge. Peripheral and central pain pathways are rapidly being better understood particularly with the development of in vivo experiments in man using functional MRI imaging (Fig 5, taken from assessing post surgical pain pathways in man after third molar surgery).¹⁸

¹² S L Drummond-Jackson, Intermittent Methohexitone, *Br Med J* 1969; 3 (5668): 474.

¹³ The Wylie Report. Report of the working party on training in dental anaesthesia, *Br Dent J* 1981; 151: 385-388.

¹⁴ General anaesthesia. Sedation and resuscitation in dentistry. Report of an expert working party (chairman David Poswillo) prepared for the Standing Dental Advisory Committee, March 1990.

¹⁵ Celsus, *Liber VI*, ix.

¹⁶ www.tylenolliverdamages.com/timeline.htm.

¹⁷ R A Dionne, J Snyder and K M Hargreaves, Analgesic efficacy of flurbiprofen in comparison with acetaminophen, acetaminophen plus codeine, and placebo after impacted third molar removal, *J Oral Maxillofac Surg* 1994; 52: 919-24; discussion 925-926.

¹⁸ M A Howard, K Krause, N Khawaja, N Massat, F Zelaya, G Schumann, J P Huggins, W Vennart, S C Williams and T F Renton, *PLoS One* 2011; 23; 6:e17096.

Figure 5 Illustration of human brain activity after third molar surgery (with acute post surgical pain) using functional MRI with arterial spin labelling (Howard et al 2011¹⁹)



Improvement in our understanding of the behavioural and affective components of pain is essential in underpinning improved management for our patients. All these developments take a comprehensive team of translational clinical and non clinical researchers.

Historically it appears that key contributions were made by dentists particularly with regard general anaesthesia. Without exception the characters involved, whose motives were perhaps mainly commercial and often resulted in law suits, suffered a premature death.

Still today there are many key dental figures contributing to improved pain management in man to name just a couple John Meehan is leading on improvements in local anaesthesia for patients and Ken Hargreaves leads on endodontic and pulpal pain research.

¹⁹ Ibid.

THE BRISTOL DENTAL CHAIR

Chris Stephens*

introduction

The only artefact of any historic significance held in the Bristol Dental School is a dental chair (Fig 1). It is of entirely wooden construction in which the height of the seat, back and headrest can be adjusted. Quite when the chair was acquired and who bought it has been a matter for conjecture for some time as there is no record of its origin.

Dentistry at Bristol

The Bristol Medical School was founded in 1833 and the teaching of medicine and surgery preceded both the establishment of Bristol's University College in 1876 and the passing of the first Dentists Act in 1878. Dentistry at this time was seen to be part of surgery and students would "walk the wards" at either the Bristol Infirmary or the General Hospital to gain clinical experience.

The Bristol General Hospital was the first general hospital to establish a post specific to dentistry when in 1874 the position of Surgeon Dentist was created and Thomas Cooke Parson elected to it. Six years later the General Hospital was also the first to establish a special department of dental surgery.

The Bristol Infirmary (later the Bristol Royal Infirmary) continued to expect dental procedures to be part of the duties of the general surgeon until 1888. It then opened a dental department and appointed William Robert Ackland as the dental surgeon. Before coming to Bristol at the age of 25 Ackland had been Demonstrator of Practical Dental Surgery at the Dental Hospital of London, which by this time had moved from Soho Square to Leicester Square.

One of his colleagues there was the 42-year-old Charles Sissmore Tomes FRS, son of Sir John Tomes who was already an examiner for the LDSRCS Eng. It is interesting to note that in the year Ackland was appointed in Bristol, Claudius Ash and Sons donated £500 towards the extension of the Dental Hospital of London.¹ Clearly the company had seen the commercial wisdom of supporting charitable institutions dedicated to dental education and it is just possible that they may have sponsored the Bristol chair. They certainly sold wooden chairs (Fig 2).

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¹ E Smith and B Cottell, *A History of the Royal Dental Hospital of London 1858-1985*, London: The Athlone Press, 1997, p 42.

Figure 1 The wooden chair



The BDA have a similar chair in the museum collection dating from about 1860. The Bristol model does not appear in a 1860s catalogue but it does so in the 1886 Ash catalogue, as seen below. It was made primarily for charitable institutions. The only difference is the more rudimentary head-rest of the Bristol chair. This is clearly a replacement which is fixed rather crudely with a screw through the backrest. The improved chair mentioned in the

catalogue was probably the considerably more sophisticated model which had been exhibited by George Owen LDSRCS of the North London Dental Dispensary at the meeting of the Odontological Society in December 1858.²

² *Transactions of the Odontological Society*, Volume II, London: Cox and Wyman, 1861, pp 107-109.

Figure 2 The Ash Dental Chair from its 1886 Catalogue



	s.	d.
Chair as illustrated, supplied to the London Dental Hospital	170	0
Chair (Mr. Owen's) Improved—see page 44—In Birchwood, with Footstool attached, and Head-rest covered in Leather, as supplied to the Liverpool Dispensary	325	0
Hospital Chair, with simple movements, new form	92	0

Note.—The above prices are only to Hospitals and Charitable Institutions.

According to tradition, the 1886 chair was retired from regular service at some point when the Bristol Infirmary's Dental Department was re-equipped and thereafter only brought into use at busy times. This is likely to have been in 1902 when a dental operation room was provided and an Honorary Assistant Dental Surgeon appointed "to instruct students in dental mechanics". Munro Smith, a member of the consultant staff at the time reported:³

The advantage of having a properly-equipped department, with expert dentists, and the many accessories necessary for tooth extraction, etc., was at once apparent, and the shrieks associated with this branch of surgery became confined to certain days.

The Dental School became a recognized entity within the Medical School in 1906. Theoretical teaching took place in the Medical School building, which was now part of the University College. Students were also required to attend the dental departments of either the Royal Infirmary or the General Hospital for their clinical work for which they paid an additional fee. There was always intense rivalry between the two departments which continued until the two hospitals merged to form the United Bristol Hospitals in 1935.

³ T M Smith, *A History of the Bristol Royal Infirmary*, Bristol: J W Arrowsmith, 1917, p 392.

A notable feature of the Bristol dental chair is the large number of names of past students carved on it. The earliest is "G Smith 1909" (Fig 3). This could have been GH Smith who, according to Saunders,⁴ obtained his LDSRCS in 1904. It suggests that by this time the chair was out of daily use since such vandalism would not have been risked otherwise. The regular addition of names, though, does not begin until 1930.

Figure 3 G Smith, the earliest name carved on the Bristol dental chair



In 1910 the clinical conditions and supervision were so bad in the dental department at the Bristol Royal Infirmary that its students approached Mr Dowling, lecturer in dental anatomy and physiology, who was also the dental surgeon at the General Hospital. When he invited them to move to the General Hospital all but two accepted his invitation.⁵ This

defection and loss of revenue had the expected result: the Bristol Royal Infirmary immediately engaged a full-time house surgeon so that constant supervision was provided. This may well have been Basil W Tyson 1911 (LDSRCS 1911) whose name is carved on the left arm rest. He could have been one of the two students who remained to complete their clinical work at the Infirmary.

During the first World War the number of dental students fell to just one in 1916.⁶ The new wing at the Bristol Royal Infirmary (now known as the Edward VII Building), which had been opened by King George V and Queen Mary in 1912, was then occupied by the military.⁷ The building was returned to civilian use in April 1919 and the Conservation Room, Extraction Rooms and so on were then transferred to this wing. There was now a large influx of students; 50 arrived in 1919 alone and by 1922 matters had again come to a head. An urgent meeting took place between the University Authorities, the dental students and the Working Committee of the Bristol Royal Infirmary "to discuss the insufficient number of Dental Chairs provided at the Bristol Royal Infirmary".⁸ The students claimed the lack of chairs not only meant they were being deprived of sufficient chairside work, but the patients suffered in that they were kept waiting for an hour or more or were sent away and asked to attend at a later date—which did not encourage future visits.⁹ Appointments were only introduced in the Royal

⁴ C J G Saunders, *The University of Bristol Dental School and Hospital*, Bristol: The Board of Governors of the United Bristol Hospitals, 1964, p 66.

⁵ P Stoy, *The Bristol Dental School 1874-1940*, *Br Dent J* 1947; 82: 142.

⁶ *Ibid.*

⁷ Saunders, *op cit.*, fn 4, p 22.

⁸ *Ibid.*, p 15.

⁹ Stoy, *op cit.*, fn 4.

Infirmary in 1943! It would seem highly likely that the 'Bristol Chair' was once again pressed into use at this time, which would account for the absence of other names from 1911 until 1930.

Figure 4 Gordon Denner Brown's carving



In 1940 the present Dental School was opened in Lower Maudlin Street, just across the road from the Royal Infirmary Dental Department. All clinical work was then carried out within the school. Phillip Stoy, who was its first Dean (1940-47), could not recall seeing the chair nor did he know of any tradition of carving names on it.¹⁰ This was explained by the late Gordon Denner Brown (BDS UBrst 1946)¹¹ who became a resident House Surgeon in 1947. He said the chair was kept in the House Surgeons' room in the Bristol Royal Infirmary Old Building so anyone who had not been a house surgeon would not have known of its existence. As far as he could recall it was already there in 1942. By then the tradition was well-established and the chair carried at least a dozen names of former resident dental house surgeons at the Bristol Royal Infirmary.

In 1947, when Gordon Denner Brown added his name to the chair (Fig 4), he recalled it was carved using a large rose-head bur and a foot engine. At that time there were two dental house surgeons and one dental SHO. He served as both HS and SHO but he could not recall if house surgeons were allowed to add their names or if this privilege was confined to the SHO. However looking at the names in date order it would seem that there are usually two if not three names for every year so it would seem that all were able to do so. As one would expect most of the names are carved on the back and seat, but also appear on the arm rests. Two late names from the 1970s scratched on the head rest were added during the time the chair has been kept in the dental school.

The original tradition seems to have ceased in the early 1960s. This might have been for several reasons but most probably because it was moved sometime in the 1960s to the Dental School. Quite why it has not been possible to discover, but by then shortage of space was once again acute in the Royal Infirmary and so the House Surgeons' room may well have been lost at this time.

¹⁰ G Denner Brown, Personal communication, January 1996.

¹¹ *Ibid.*

Since then the chair has lived at the top of a little used back staircase, seldom frequented by students and remote from any dental hand piece and engine.

Table 1 shows all the names which have been carved on the chair.

Table 1 Names carved on the Bristol dental chair. Those shown in bold and underlined are identified as house surgeons on the lists of Bristol Dental Hospital Staff for 1940-1960 (Saunders 1964¹²)

Name as it appears	Other information
G Smith 1909	(See text)
B W Tyson 1911	(LDSRCS 1911)
1930s	
Pickles 1932 (See Note 1)	(LDS UBirm 1931)
REES 1934	(?J D Rees LDSRCS 1933)
LL Jonathan 1935	(not found in Dentists Register)
(DJ)Dymond 1935-36	(LDSRCS 1935)
J W E Snawdon (See Note 2)	(BDS UBrist 1935)
Les Scull 1936	(LDS UBrist 1935)
CL Read 1936-37	(LDS UBrist 1936)
CA Blanden 1937-38	(BDS UBrist 1936)
FPE Ewens 1938	(not found in Register)
AA Grant 1939	(BDS UBrist 1939)
1940s	
Donald Davis 1940	(not found in Register)
R B Stiles 1940-41	(LDS UBrist 1940)
DH Buckland 1941	(LDS UBrist 1940)
PB Carey 1942	(BDS UBrist 1941)
P M Nicholas 1942	(BDS UBrist 1942)
HB Doubt	(LDS UBrist 1943)
Ralph H S Shipway	(LDS UBrist 1943)
RM Sharp 1944-6	(LDS UBrist 1941)
J W B Kay 1944	(LDS UBrist 1944)
H Lester Leech 1944-45	(LDS, BDS UBrist 1944)
JFV Woolley 1945-46	(LDS UBrist 1945)
TW Beer 1945-46	(LDS UBrist 1944)
AFJ Smith 1946	(LDSRCS 1939)
(R.J) Brownlee	(BDS UBrist 1947)
LG Denner Brown 1946-7	(LDS UBrist 1946)
TC Hughes 1947	(LDS UBrist 1947)
PJ Sheldrick 1947	(BDS UBrist 1946)
J Fishpool MDCCCXLVIII	(LDS UBrist 1947)
LK Walden 1948	(BDS UBrist 1947)
LM Lloyd 48/49	(LDSRCS 1948, BDS UBrist 1949)
DC Berry (See Note 3)	(LDS 1949, BDS 1950 UBrist)

¹² Saunders, op cit., fn 4, pp 32-33.

1950s

GD Pamey 1950	(LDS UBrist 1949)
AH Chivers 1950	(LDS BDS UBrist 1950)
M Bernstein	(BDS UBrist 1950)
Ruth Yearn	(BDS UBrist 1950)
JS Cooper 1950 (See Note 4)	(BDS UBrist 1950)
GD Everard 1951	(LDS UBrist 1951)
P D Wood 1951	(not found in Register)
J A W Taylor 1951	(LDSRCS 1951)
IL Busbridge 1952-54	(LDSRCS 1952)
BF Mahle 1953	(BDS UBrist 1952)
Sati P Chatterjee 1953-55	(LDSRCS 1953)
John E Bowerman 1954	(BDS UBrist 1953)
Balbir Singh 1954	(not found in Register)
Philip C Smith 1955	(LDSRCS, LDS UBrist 1954)
W (B)Senior	(LDSRCS 1955)
GW Goodman 1957	(BDS UBrist 1957)
W.A Morgan	(BDS UBrist 1959)
RS Young 1959	(LDS UBrist 1959)
NA Raja 1953	(LDSRCS 1953)

1960s

DK Stables 1961-63	(BDS UBrist 1961)
M MacGregor	(BDS UBrist 1961)
M H Platt 1963	(BDS UBrist 1962)

Undated and unidentified names

Sellin	(?JF Sellin LDSRCS 1927)
Forsyth	(?W Forsyth TD BDS UBrist 1930)
Dowland	(?ER Dowland LDSRCS 1931)
FI Lt O F Brown	(LDS ULeeds 1935)
DC Sa	(???)

NOTES

1. Later lecturer in dental surgery
2. Later lecturer in oral surgery
3. Later professor of dental surgery
4. Later lecturer in dental prosthetics

CARDIFF DENTAL SCHOOL (1964-1971) An orthodontist's viewpoint

W A Barry Brown*

Introduction

I was a founder senior lecturer at the Cardiff Dental School between 1964-1971 responsible for the Orthodontic Division. After qualifying with an LDSRCS from the Royal College of Surgeons of England in 1950 following undergraduate study at Guy's hospital, I gained varied clinical experience, including my National Service in the Royal Army Dental Corps,¹ before I decided to specialise in orthodontics.

In 1954 I was appointed to the orthodontic house job at King's College Hospital Dental School, working under Barry, later Professor, Leighton. I obtained a Diploma in Orthodontics in 1956 and was appointed orthodontic registrar at the London Hospital. In 1957 I went as a research assistant at the Dental School of the University of Illinois, under Professor Maury Massler, the Director of the Pedodontic Department. I worked on the chronology of tooth development in cattle and in 1959 obtained an MS (USA equivalent of MSc).² On my return from America I was appointed as a lecturer in orthodontics at the Dental School, Queen's University, Belfast. There I came under the guiding influence of Professor James Henderson Scott and worked on my PhD.

After four years of clinical work, research and diverse teaching at Queen's, I applied in 1963 for the senior lectureship and Head of the Division in Orthodontics at the Welsh National School of Medicine.

Cardiff Dental School

I first heard of the proposal to build a new dental school in Cardiff from James Scott, who was scientifically, medically and dentally qualified as well as being diversely knowledgeable in many fields. He had applied for the job of dean of the new school with responsibility for designing a suitable building and developing a teaching programme for dental students. His design, which I saw in rough sketches, was brilliantly original, based on a drum pierced with broad

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¹ W A B Brown, National Service in the Royal Army Dental Corps in Nigeria 1951-1953, *Dental Historian* 2010; 51: 76-84.

² W A B Brown, *Tooth Development in Cattle*, MS Thesis, University of Chicago, 1959, 118 pp.

picture windows. The dental chairs were to be arranged round the periphery of the floors so the students would work on their patients in front of the windows. All the services - gas, water, electricity, pressurised air and waste disposal - were to be arranged centrally, as were waiting rooms, stairs and lifts. Areas of the circle could be partitioned off to whatever number of dental chairs was needed for a particular discipline. It would have been a building of the future, allowing for the unpredictable changes of emphasis that could be expected in dentistry in the years to come.

Professor Brian Cooke, founder Dean

In 1961 Professor Brian Cooke, an oral pathologist, was appointed as dental dean-elect to the newly founded Dental School; and in 1963 Professor John Miller, a children's dentist, was appointed as assistant dean. I remember Cooke from the time he came to Guy's Hospital as a lecturer in Professor Rushton's Department of Oral Medicine and Oral Pathology. He was famous for his successful cram course for students wanting to sit the final FDS examination. People were slightly in awe of his single-mindedness.

Heads of divisions

I forget who at my interview in 1963 represented orthodontics, but I do know there was a conflict of opinion as to whether or not undergraduates should treat orthodontic patients. I was in favour and outlined how I would make it possible, remembering what I had learned from Leighton. Three other people were appointed at the same time as Heads of Divisions: John Bates from Manchester for prosthetics, Neil Swallow from the London Hospital for children's dentistry and David Adams from Edinburgh for dental anatomy. Des Eccles for conservative dentistry and John Woffie for oral surgery were appointed a few months later.

We all had a confident view about our particular discipline and how to organise our divisions. Eccles and I had worked for our PhDs at Queen's University under the guidance of James Henderson Scott and David Adams had earlier obtained his BSc under him. I had worked in the Children's Department at the London Hospital and knew of Swallow's role in reorganising the curriculum. Woffie and I had graduated from Guy's Hospital. Three of us in our previous jobs had helped in the design of a new dental school. I am sure the extent that many of our earlier experiences overlapped contributed greatly to the easy collaborative spirit of our discussions.

John Miller's role

Miller had an ambivalent responsibility for children's dentistry. Paedodontics was his speciality, but nobody was in any doubt that Neil

Swallow, a clinician with exceptional skills, ran the Children's Division. Orthodontics came under John Miller's overall guidance, but it was usually Brian Cooke who made the important decisions about any of the divisions. Cooke in his history of the school³ clarified John Miller's role and I quote selectively:

John brought to Cardiff all the knowledge and experience that counterbalanced my own. He was familiar with the needs of the profession and ideally suited to selecting potential dental students, as well as handling the considerable public relation exercise between the School and Hospital with the press and television. I was thus fortunate to have as a colleague and friend in those early days, a man so senior and respected in his discipline, who was broadly educated in languages, modern and classical, and with many interests outside dentistry including golf. He was a fully rounded university man.

Early days in Cardiff

We did not take up our full time appointments for a year, but assembled in Cardiff every other month for planning sessions. The location for the Dental School, the first part of a large planned medical complex, was on a peripheral site bordering playing fields and suburban residences. Only the steel frame of the Dental School and Hospital had been erected when I first visited the site. The first dental students were still to be selected and then programmed to complete their preclinical examinations in time for commencing their clinical studies at the new Dental School and Hospital, which was to open in October 1965.

At our first formal gathering as a team, Cooke presided and Miller was there beside him. Cooke frequently emphasised that we were a 'first eleven'. At these early meetings he stated what was expected of us. The two major concerns, because of the deadlines that had to be met, were the preparation of schedules for purchasing equipment and secondly deciding on the dental curriculum. We all enthusiastically participated in everything that needed to be done to get the school off the ground.

Professor Cooke as dean

Anyone meeting Cooke in his early days would have been impressed by his boundless energy. He approached the establishment of the new

³ Brian E.D. Cooke, *The History of the University of Wales Dental School from 1961 until 1982*, Cardiff: Published privately, 1997, 86pp.

school with boyish enthusiasm, selflessly devoting every working hour to the project. He records in his history why he had not originally applied for the post of dean of the new school:

I had not applied for the post when it was first advertised because I regarded my position as reader in oral medicine and oral pathology in Professor Martin Rushton's department at Guy's as an ideal one, allowing me to fill all my interests almost free of administrative responsibilities. Furthermore, I was in the middle of a research programme for a PhD involving tissue culture.

Cooke was highly regarded as an oral pathologist who knew his subject in great depth. He was an enthusiastic teacher, but had little research experience and had not obviously been involved in formal discussions on dental education in the future.

Insight into Cook's perception about the world may be gleaned from his warning to us when we were on student selection panels. Students should not be recruited from the sons of shopkeepers because they would not know how to behave. And yet, among the parents of his newly appointed senior lecture staff, one father was a labourer, another an electrician and a third a butcher.

Cooke dedicated his life to setting up the new school and said he could not understand why anybody would have interests outside dentistry or that one should read anything but dentistry, an unexpected claim for a person who had several of his own special interests outside dentistry. At one time there was concern for his health, with the medics implying, if he went on at his present rate, he might not survive. On one occasion he had one of his "turns", and Swallow drove him home. It was a beautiful sunny day with magnificent clouds, and Cooke told Neil: "I never realised how beautiful nature could be. I've had no time to look around."

Responsibilities

My colleagues, Adams, Bates, Swallow and I took up our full time appointments in 1964 and were accommodated in a small office block near the centre of Cardiff. We were kept very busy preparing the equipment schedules, deciding which was the best buy. Bates was the most informed about technical equipment specifications for his Division, always knowing exactly what he wanted. Apart from the responsibilities for our own Divisions, we discussed the requirements for shared usage needs. Cooke allocated to me the devising of the dental records system. I went around with Mr Morgan, the chief records officer for the Cardiff Group of hospitals, to look at recently installed systems. One of the problems in devising a scheme was that patients were not to walk around with their own notes and for that, a document lift had been installed with on each floor its own

service station. A system was eventually devised making the best use of the facilities that had been incorporated into the building design. Funding, as far as equipment was concerned, was on a generous scale.

The Heads of Divisions were responsible for working out the dental syllabus and for deciding the way the students would be taught. Cooke instructed us not to confine our thinking exclusively to our own disciplines but to consider what should be taught in the wider context of what kind of dentist the school hoped to see at the conclusion of the course. Swallow, because he had played a major part in the reorganisation of the dental curriculum at the London Hospital, was accepted by us as chairman and leader of the group. We settled on the allocation of firms of students to Divisions for fixed lengths of time where teaching would be by seminars. It had certain advantages, but with the serious disadvantage that teaching of subject matter had to be repeated for each firm of students. It wasn't equally suitable for all disciplines. However, I was willing to try any idea that meant that the teaching staff were more directly involved with students, and I believe that overall the system was especially beneficial for the students.

The detailed preparation and individual contributions made by each of us to devise an effective syllabus forged a sense of shared endeavour. We all wanted it to succeed. Cooke played no part in the discussions and Miller did so only occasionally. Both professors gave their approval to our final draft.

Among my immediate colleagues, all of whom had varied talents, it was apparent that Swallow had the clearest overall view on what dental education was about. Bates was most single-minded in establishing his own Division. Adams was a most agreeable person with an intuitive understanding about the foibles of his fellow men and sustained us with his dry wit. Des Eccles was a perfectionist who did everything to assure that the highest standards were achieved for conservative dentistry. Wolfie had, with the special needs of oral surgery, the most challenging task to fulfil.

Dental School architectural design

Cooke relates in his History⁴ that a competition for designing a Dental School in Wales as part of a new multi-million pound medical teaching centre had been announced in 1958. The *Architect's Journal* of September 1961 carried an article describing the result of the competition as disappointing:

The assessors have done little to further hospital planning by choosing three pedestrian schemes whose only virtue is that they produced a

⁴ Ibid.

workable hospital and no more; and possess little of any architectural merit (Fig 1).

Figure 1 The dental school standing alone as the first part of a multi-million pound medical complex



As mundane as the design was, it was a very spacious building and had excellent separate large and small lecture theatres. I was surprised to find how advanced the plans were for the new dental school before Cooke took over. The complete building had some excellent features,

especially in the provision of essential services of gas, electricity, air, water and the disposal of waste. There were impressive facilities in the basement for storage and the behind-the-scenes running of the Dental School and Hospital. But in my mind, the design had shortfalls as a building for efficient teaching because it had not been known before the school was built how the students were to be taught and in what group size. The facilities for clinical and theoretical teaching bore only a haphazard relation to the needs of the teaching scheme that was eventually devised, but happily space was on such a generous scale they were easily adapted.

My understanding of dental school planning had been acquired while participating in endless discussions at my last job about the design of the new Dental School in Belfast. I was very familiar with the need to balance the demands of one speciality against another. The Cardiff plan had one fundamental and wasteful flaw in its layout, which led to a lot of doubling up of facilities with the need for extra supporting staff. The building's footprint was in the shape of a capital T, the same as the Belfast school. The clinics were each located in the arms of the T separated from each other by the stairwell and lifts, while the administration and specialised services were contained in the stem. This arrangement effectively divided the clinics from each other, necessitating each of them having their own reception and waiting areas.

Cooke said⁵ he had very little to do with planning of the accommodation of the building; Dick Stephens, Head of the Department of Children's Dentistry at the Eastman Dental Hospital had prepared the plan. It must have been a prodigious effort to complete all he did in eighteen months between 1952-53. Stephens was, Cooke writes, the ideal man for the task for he was innovative, forward looking, imaginative, and particularly skilled in the practical aspects of dentistry. There were some very good features in the new building and some deficiencies, most of which were easily corrected as were two features that represented a serious hazard to children visiting the hospital. The Children's and Orthodontic Divisions were on the first floor reached by a wide staircase protected by a handrail supported by thin metal balusters, which were so widely spaced a child's head and body could easily pass between them. Fortunately, shortly after we had our first patients, Professor Miller walking up the stairs saw a child walk between the balustrades on to the roof of a small office overlooked by the stairway. That night, carpenters fitted sheets of hardboard to make the staircase safe. A few months later plate glass panels were fixed into place. There was a large rectangular pond by the main entrance, which I perceived, as a hazard to children, but the view was that when children came to the hospital, it was the responsibility of parents to see their children came to no harm. Some years later I saw that it had been turned into an attractive rock garden and now it has been planted with trees. These details are matters of trivial report but they reflect all that was involved in setting up the new school.

Epidemiology

In the midst of making preparations for the new dental hospital, Swallow, in collaboration with Professor Archie Cochrane Director of the Cardiff MRC Epidemiological Unit, identified a random sample of people in a valley community to the north of Cardiff who could be examined for their general dental condition. I, along with my fellow senior colleagues, did the examinations and we were left in little doubt about the need for increased dental resources in Wales. Radiographs were taken for a number of patients and I found it was a salutary lesson to learn that though we all had a wide range of clinical experience, we varied considerably in our diagnosis of what we saw.

The Dental Hospital is opened

After a year, the fitting out of the hospital was nearing completion and we saw the lavish accommodation available for our Divisions and the spacious facilities for clinical work. There were numerous small practical

⁵ Ibid.

details to attend to such as the best way to arrange instruments for each clinical place and the simplest way to assure materials like impression materials were ready to hand and in the right quantity. I was amused to find an automatic sweet packing machine for packaging impression materials in exact quantities.

Initially there was concern from where the patients would come and understandably some general practitioners were anxious about the effect the new hospital might have on their practices. We in our turn were concerned about what would persuade patients to come to the Dental Hospital rather than to their local dentists? Several Cardiff practitioners recruited to the staff were an invaluable link between the community and us.

The years unfold for the Orthodontic Division

The hospital opened for patients in 1965, followed a year later by the arrival of the clinical students who had completed a year of basic sciences. And so after doing no clinical dentistry for two years, my days once again became divided between clinical work, teaching, research and administration.

The appointment of Michael Harkness, a New Zealander, as lecturer in orthodontics rapidly transformed the activity of the Division. We set up together a variety of schemes for long term monitoring of treatment procedures. We prepared teaching material, involved students in simple investigations and started up a number of collaborative projects. His energy and enthusiasm were limitless.

Peter Cousins, a highly regarded Cardiff orthodontist, became a part-time clinical teacher. He was an invaluable link with general practitioners. But most important was his wholehearted sharing of the Division's activities.

Reg Wheeler, whom I had known at the London, was appointed as chief orthodontic technician. He was a gifted craftsman and helped in every conceivable way to assure the smooth running of the Division.

Garry Lewis, who qualified from Guy's hospital, originally worked at Cardiff under Cooke's guidance as a house surgeon and registrar but later became interested in orthodontics and was to be a most effective member of staff.

Some academic developments

There were the annual British Society for the Study of Orthodontics (BSSO), European Orthodontic Society (EOS), International Association for Dental Research (IADR) and Bone and Tooth conferences for us all to attend and present papers or posters. There were numerous less regular meetings of teachers at which I felt we should be represented. I was

invited to join the BSSO's committee and became involved in a number of sub-committees, frequently travelling to London for meetings.

There was never enough time to do everything as completely as we wanted, and without the help of Harkness, Cousins, Wheeler and very competent secretarial assistants, orthodontics would have appeared as a very tired old horse.

We were always looking for new ideas to explore and fresh ways to establish a high profile for orthodontics. One of the serious consequences for me with our involvement in so many spheres was a complete stopping of work on my PhD. I had collected all the data and made thousands of measurements from the cephalograms of families I had obtained during my previous appointment at Queen's University. My failure to work on the thesis was frequently on my mind. It was a job I knew I must complete, if for nothing else, than for my own self-esteem. The thought of the hundreds of hours that I had already spent on the study might be wasted, concerned me. I was betraying the families whom I had persuaded to become my sample and who had shared my enthusiasm and given up much of their time.

Help was on hand. When Harkness completed his MSc he offered to run the clinic for me for three months so I could stay at home and work on the thesis. All I had to do was to go in the afternoons to sign the letters that he had dictated. It was a marvellous gesture and without it my thesis would never have been written. It took me six months to complete my write up before I got it bound and sent off to the examiners.

Conclusion

This is a brief account of my memories of working under Brian Cooke to help establish a new dental school. His special contribution to the development of the school was to gather a team of experienced and highly qualified senior lecturers and to give each of them the freedom to establish their disciplines and fulfil their potential. He made great personal sacrifices in taking on the deanship and was never able to return to his early researches.

I pay too, a special tribute to my fellow senior lecturers who proved to be such agreeable colleagues and companions.

Acknowledgement

The photograph was kindly supplied by Cardiff University.

THE GREAT MARINE TRAVELS, SCURVY AND TEETH

Xavier Riaud*[†]

According to Lutton¹, in the 18th century sailors were only summoned in wartime. However that century saw many wars: the War of the Spanish Succession (1701-1713), the War of the Austrian Succession (1740-1748), the Seven Years' War (1756-1763) and the American Revolutionary War (1775-1783). On the seas, the main enemy for the French was England. Lutton said:²

France was often competing for trade in the colonies, especially in Canada, Louisiana, the West Indies and India. Despite those everlasting conflicts the main cause of death was not fighting with the enemy but disease and consequences of ill-treated injuries which quickly became infected. During peace time, there was an average annual mortality rate of thirty percent in the tropics.

Living conditions aboard ships

The living conditions on ships were conducive to disease: "humid, dirty, overcrowded and vermin-infested vessels, fatigue, malnutrition, alcoholism amongst the crew."³ There were commonly outbreaks of epidemic diseases. The worst diseases which decimated numerous ships' crews were not caused by the state of foods but by what they did not contain. Scurvy, a result of vitamin C deficiency was a major cause of sailors' deaths.

Symptoms of scurvy

The effects of scurvy begin in the mouth with a purplish swelling of the gums, while the bottom of the mucous membrane is pale pink. The gums then become hypertrophic, loose, spongy and bleed upon the slightest contact, which prevents eating. It is accompanied by abundant, fetid salivation and acute pain. This hypertrophy increases, sheathing the teeth in a spongy purplish tissue. On the palate, an oedematic and ecchymotic roll of flesh appears behind the incisors and canines, while on the palatal and velar mucous membrane blood suffusions or

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¹ Coranie Lutton, *Sur les traces de La Pérouse au large de Vanikoro : apport de l'odontologie légale aux fouilles archéologiques* [On La Perouse's footsteps off the Vanikoro Coast : contribution of legal odontology to archaeological excavations], Thèse Doct Chir Dent [PhD thesis in Dental surgery], University of Nantes, 2007.

² Ibid.

³ Ibid.

purpuric pigments can be found in abundance. Then, necrotic and gray ulcerations, sometimes haemorrhagic, appear on the gingival edge which spread to the neighboring mucous membrane and disrobe the alveolar bone. Subsequently, teeth progressively weaken and fall out. The pain is acute, haemorrhaging and salivation are regular and the breath is fetid. Numerous oral infections often evolve into juxta-dental or peri-maxillary abscesses. Subsequently the patient becomes thin and anaemic and, infected with skin haemorrhages in the form of purpura, dies in adynamia due to renal and heart failure.⁴

Pytheas of Massilia

Pytheas, an explorer from the Greek colony Massilia (modern day Marseille, France), made a journey of exploration to north-western Europe in around 340-325 BCE. Pytheas was the first person on record to describe the polar phenomena, the Celtic tribes of Great Britain, as well as the Germanic tribes of the Northern Sea and Baltic shores. After two years travelling, "Pytheas' companions were wrinkled (and) ... most of the sailors were toothless and had rotten gums."⁵

Saint-Louis (1214/1215-1270)

During the Seventh Crusade, after the conquest of Damietta, the King as well as his troops suffered from scurvy at the siege of Al Mansurah, on 8 June 1249. Sire de Joinville said they did not know it yet, but when approaching Damietta, things worsened.⁶

We never ate fish in the camp, except for the European pond terrapin, during the whole period of Lent; the European pond terrapin ate the dead people because they are gluttonous species. And because of this misfortune and the malignance of the country where a drop never falls, the whole army became ill; it was such a dreadful disease that the flesh on our legs dried and the skin on our legs was covered with black and earth-coloured flecks, like an old boot. We, who contracted such a disease, also suffered from rotted gums; giving everyone bad breath. At the end, no one was spared by this disease.

This was only the beginning:

⁴ H Stroweis, *Dental pathologies in Nazis concentration camps: 1944-1945*, DDS thesis, University of Paris, 1973.

⁵ Patrick and Olivier Poivre d'Arvor (eds), *Coueurs des mers – Les découvreurs* [Sea runners – the discoverers], Paris: Place des Victoires, 2003.

⁶ Sire de Joinville, *Histoire de Saint Louis écrite par son compagnon d'armes* [The story of Saint Louis written by his comrade in arms], Jean de Bonnot (ed.), Paris, 2006 (tiré du Livre des saintes paroles et des bons faiz nostre roy saint Loos par Jehans de Joinville écrit aux alentours de 1308) [taken from *The Life of Saint Louis* by Jean de Joinville, c1308].

The disease worsened in the camp so much so that the dead flesh of the gums was removed by the barber to help soldiers chew and swallow their food. It was such a pity to hear the people in the camp from whom the barber was cutting the dead flesh; for they were shouting as loud as pregnant women do when giving birth.

Vasco de Gama (c 1469-1524)

During his journey towards the Indies in 1497-1498, Antão-Vas de Camões, a companion of Vasco de Gama and a relative of the famous 18th century Portuguese poet, related: "their gums swelled, were deformed, the flesh rotted as it grew; it emitted such a fetid and dreadful smell that the air was stinking out." To provide treatment they lacked skilled surgeons or doctors, but nevertheless they had to cut away the putrid flesh since any infected people would soon die. In that year, 100 out of 160 crewmen died of scurvy.^{7 8} Poivre d'Arvor pointed out ⁹ that at the beginning of 1498:

All the members of the crew lost weight, ... they were pale, their gums were swollen, ulceric, black like coal and their teeth worked loose. At the beginning, we counted those which fell, then those which remained. Soon, those toothless mouths kept silent, terrified. They could not even bite into coconut flesh. Scurvy would never leave them alone anymore. Their breath was foul, like decomposing flesh.

On 20 May, as they approached Calicut, in the Indies, Paulo de Gama, the explorer's brother was dying. He was covered with black blotches. He lost his remaining teeth when passing by the Cape of Good Hope. Fresh food, and notably oranges, seemed to reinvigorate him. Despite numerous efforts, he collapsed in Vasco's arms in front of the islands of the Green Cape.¹⁰

Jacques Cartier (1491-1557)

On 3 May 1536, during his second journey, Jacques Cartier left Canada. During his stay he saw his whole crew decimated by a scurvy epidemic. If it had not been for the Indians who gave them a remedy, his expedition would have been jeopardised. The potion was made of white cedar. According to Lamendin¹¹ Jacques Cartier learnt the anti-scurvy quality of pine needles from the Indians.

⁷ E Bevilion, *Jacques cartier, le scorbut et la bière de sapinette* [Jacques Cartier, scurvy and spruce pine beer], Thèse Doct. Pharm. [Phd in Pharmaceutical Medicine], University of Nantes, 1992.

⁸ Lutton op cit, fn 1.

⁹ Poivre d'Arvor, op cit, fn 5.

¹⁰ Ibid.

¹¹ Henri Lamendin, *Soignez votre bouche par les plantes* [Treat your mouth with plants], in L'Harmattan (éd.), *Collection Médecine à travers les siècles* ["Medicine throughout the centuries" Collection], Paris, 2007.

The importance of citrus fruits

In 1593, Sir Richard Hawkins (1562-1622), an English navigator, proved that lemon was highly efficient against scurvy. It was confirmed in 1601 by its eradication for the first time in an intercontinental journey from England to the Indies and by the Swedish admiral, Henrik Fleming, in 1628.

From 1740 to 1744, facing the death of 1812 men out of 2000 embarked sailors, the circumnavigation of the admiral George Anson (1697-1762) contributed to the healing of this disease.¹²

As for James Lind (1716-1794), the Scottish doctor and pioneer for better hygiene in the British royal navy, he led what is considered today to be one of the first scientific tests against scurvy. While on board the *Salisbury*, on 20 May 1747 he divided a group of twelve sailors affected with scurvy into six groups of two sailors. Lind administered different substances to each of them: cider, elixir of vitriol, vinegar, a concoction of herbs and spices, seawater, and finally oranges and lemons. Only the last group who had eaten citrus fruits recovered quickly from scurvy, the marks of the disease disappearing from the skin and gums in a few days. He published his results in 1753.¹³ But it was only from 1795 that the Navy followed the recommendations of the Scottish doctor by supplying lime juice to all British vessels.¹⁴

Vitus Bering (1681-1741)

This Danish explorer who served for the Russian Navy, and whose accurate cartography was proved by James Cook, gave his name to the Bering Strait, the Bering Sea, the Bering island and to the Bering Land Bridge. During his first expedition in 1728 he travelled north until he found no land, and proved that the American continents were divided by sea by sailing through "his" strait. He did not see the American continent, a fact which was held against him upon his return. During his 3-year journey his crew was decimated by scurvy. Bering died in 1741. His body as well as five of his sailors was disinterred in 1991 and brought back to Moscow, where doctors carried out a craniofacial reconstruction of his face. In doing so, they were able to claim that his teeth never showed any marks of scurvy, proving that he died from another disease.¹⁵

James Cook (1728-1779)

The famous English navigator, Captain James Cook, supplied pickled cabbage twice or three times a week to his crews. They were always in good health and never

showed any signs of scurvy during three years and seventeen days of journey. In his Australian journeys Cook discovered similar anti-scurvy characteristics in purslane, an ancient salad.¹⁶ During his first journey (1768-1771) of exploration into the Southern Pacific Ocean none of his sailors died of scurvy. Cook had introduced cabbage and lemon into the crew's food. Therefore, the success of his three journeys was mainly due to the sanitary measures he used rather than to his "remedies". Cook made sure that his crew followed strict health measures and increased stopovers to get his supplies of fresh food (Magré, 1995; Lutton, 2007).¹⁷ He received the Royal Society of London's 1776 Copley medal for his success in preserving his crew's health.

Jean-François Galaup (1741-1788 (?), Count de La Pérouse

La Pérouse was extremely careful with the health of his men. In 1773, when he was crossing the Indian Ocean, he never lost a single man to disease. Wherever he stopped, he supplied his crew with fruits and fresh meats. He also succeeded in maintaining meticulous cleanliness. In 1782, even though his expedition in the Hudson Bay was a major success with the storming of two British forts, it also was a disaster: 400 out of the 536 sailors came back ill and 70 died because of scurvy, "the sea plague". In 1785, on the eve of a mission ordered by Louis 16th, he made sure to fill the holds of his two ships with food known for their anti-scurvy qualities: malt, onions and pickled cabbage.¹⁸ Inspired by Cook's recommendations, La Pérouse decided to focus notably on malt and pickled cabbage. Therefore there were no lemons or oranges in the holds of the small squadron leaving Brest. Later, he knew how to apply the sanitary measures of his predecessor and imposed them to his crew.²¹

The fresh food supplies, either vegetable or animal, cured the sick crew so drastically that our monthly-fed crews with pigs arrived on Botany Bay better in shape than when they left France even though they could not make any stopovers during 24 hours...I consider that beer malt, Prussian beer, wine, pickled cabbage are only anti-scurvy because the substances, either liquid or solid, barely adulterated and

¹² Stephen R Bown, *Scurvy*, Toronto: Thomas Allen, 2003.

¹³ Lind James, *Traité sur le scorbut* [Treaty on scurvy], L E Ganeau (ed.), French editor of the 18th Century, living in Paris, 1756.

¹⁴ James Lind, *Mémoires sur les fièvres et sur la contagion lus à la Société de Médecine d'Edimbourg* [Dissertation on fevers and on the contagion read at the Royal Society of Edinburgh] Jean-François Picot (ed), Montpellier, 1780.

¹⁵ <http://fr.wikipedia.org>, *Vitus Béring*, 2009, pp. 1-3.

¹⁶ Lamendin 2007 op cit, fn 11.

¹⁷ Jean-François Magré, *Apparition des chirurgiens dentistes dans la marine et la pharmacopée de leur temps, XVII-XIXème siècles* [Apparition of dental surgeons in the marine and materia medica of their time, from the 17th to the 19th centuries], Thèse Doct. Chir Dent [PhD in dental surgery], University of Nantes, 1995.

¹⁸ Lutton op cit, fn 1.

¹⁹ Philippe Paressant, *Dans les coffres de mer de Monsieur de La Pérouse* [In the sea chest of Monsieur La Perouse], Thèse Doct Pharm [PhD in pharmaceutical Medicine, University of Nantes, 1995.

²⁰ Lutton op cit, fn 1.

²¹ 1788 Archives nationales [National archives], fonds marine [seabeds], 3JJ 389 f°165 et 3JJ 389 f°166. Lettre de La Pérouse à Fleurieu 7 février 1788 [letter from La Perouse to Fleurieu, Botany Bay, 7 February 1788].

constituted healthy food for men; they are, however, not enough to treat scurvy but useful to delay it and with that respect, its use is highly recommended as I look with medical subtlety the staring looks of the French and English doctors: we would drink full bottles of it that it would not do as good to the sailors as slices of rosbief, turtles, fish, fruits and herbs

However, in the last letter he wrote to his wife Eleonore, on 7 February 1788, La Pérouse indicated: "Upon my arrival to France, you will take me for an old man of a hundred years old! I do not have any teeth and hair left." Hit by scurvy, he had lost all his teeth.^{22 23 24}

Nota Bene

It is important to point out the crew of Christopher Columbus (1451-1506) was also affected by scurvy. The Genovese was said to have left several sailors on an island in the Caribbean. They were affected by scurvy which they survived by eating lemons on Curaçao island ("Healing" in Portuguese, name given to the island by those who fished them).²⁵

Bougainville (1729-1811) began his world tour in 1766. In his diary, he wrote: "Rain was constant, so was Scurvy."²⁶ Also affected by this disease were the expeditions of Fernand de Magellan (1480-1521) through the Strait of Magellan from 1519 to 1522 and that of Francis Drake (1542-1596) through the Cape Horn from 1577 to 1580.

At first, the disease was more prominent on the land: it infected the soldiers of the expeditionary forces of Bonaparte in Egypt from 1798 to 1801, in town blockades such as Louisburg in the United States from June 8 to July 26, 1758, Paris in 1871, the soldiers in the American Civil War (1861-1865) and in the deportee camps of Nazi Germany from 1933 to 1945.²⁷

Finally, it is fundamental to mention Sir John Franklin's last expedition (1786-1847). In 1845, the British navigator went to explore the Arctic. Blocked in the Strait of Victoria, he died with his men. In 1981, medico-legal studies of the exhumations of his remains on King William Island, located in the Canadian arctic archipelagos, proved that his crew was notably decimated by scurvy. However, collected

²² Henri Lamendin, François Emptoz and François Devars, *Dictons, propos, slogans bucco-dentaires, d'hier et d'aujourd'hui* [Sayings, topics, oral slogans from today and yesterday], Musée dentaire, Faculté Odontologie [Dental Museum, University of Odontology], Lyon, 2006.

²³ Edouard Launet, « La Pérouse jette l'ancre au Palais de Chaillot » [La Perouse drops anchor at the Chaillot Palace] in *Libération*, 01/04/2008, <http://www.ambafrance-fj.org>, p. 1.

²⁴ Michel Gasse, « La Pérouse et Selkirk » [La Perouse and Selkirk], in <http://www.notrefamille.com>, Sans date [no date given], p. 1.

²⁵ Poivre d'Arvor, 2003, op cit, fn 5.

²⁶ Ibid.

²⁷ P Aubry, « Le scorbut, une maladie des marins du XV^{ème} au XVIII^{ème} siècle, toujours d'actualité » » [Scurvy, the disease of sailors from the 15th to the 18th centuries, still relevant today], in *Med Trop* 2001; 61: 478-480.

testimonies showed a surprising pathology whose origin was the great cold: "During such cold temperatures, teeth would shatter after two or three hours from chattering, they literally exploded, throwing splinters of bone and enamel into clenched jaws."²⁸

²⁸ Owen Beattie and John Geiger, *Frozen in time: the fate of the Franklin expedition*, London: Bloomsbury Publishing Ltd, 1987.

THE LIFE OF MRS ROPER, A 19th CENTURY DENTIST

Julie Papworth*

Many people consider women dentists as a relatively modern development. However, using dental advertisements as his source, the distinguished dentist and dental historian, John Menzies Campbell, identified several women practitioners working in the 18th and early 19th centuries.¹ He cites examples dating from as early as 1752 and comments: "They seem to have embraced all branches of their profession." It appeared that "some were in partnership with their husbands. "In such cases, the wives not infrequently, restricted their practices to women patients." He discovered evidence of one early lady dentist in the following advertisement from *The Satirist* of 25 June 1837:

MRS ROPER (Sister-in-law to the present Lord Teynham) DENTIST, surgical and mechanical, No. 7, Carburton-street, Portland-street. Mrs. R. respectfully acquaints her numerous friends and connexions that she has returned from Oxford, and practises in London till the close of the Season only, visiting successively Tunbridge Wells, Hastings and her usual winter resort, Brighton. At home from 9 to 12; Noblemen and Gentlemen's families attended only at their residences. No attention to letters unless post paid.

Mrs Roper was clearly not among those women dentists who confined their work to treating women, nor does it appear that she was the wife of a dentist. She carefully designed her advertisement to appeal to the highest members of society. She followed the aristocratic pattern of the time, staying in London during The Season, moving on to the fashionable spas and towns of the era, and then spending the winter in the milder climate of Brighton. This suggests a picture of a skilled professional woman who enjoyed an affluent life style and who lived and worked among the gentry and nobility to whom she was linked by marriage.

A search in the Collection of British Newspapers held by The British Library² has uncovered some further advertisements of Mrs Roper's. They add to the picture of this lady and her background. In 1836 she proudly proclaimed:³

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¹ J Menzies Campbell. Early advertisements. A contribution to dental history, *Dental Items of Interest. A Monthly Journal of Dental Science, Art and Literature* January-December 1949: pp 1229-1244.

² British Newspapers 1600-1900. Digital collection of British historic newspapers held at the British Library.

Mrs Roper, Dentist from London and Brighton, (pupil of Charles Gresson, Edinburgh, 1816) at Home from Ten to Four, No 8 Holywell-Street, Oxford. Mrs Roper's stay in Oxford ends with the present Term as she intends visiting Leamington and Cheltenham. Teeth extracted with the greatest ease, cleaning, stopping &c. She totally eradicates the scurvy in the gums – a disease so rarely understood by Dentists – whereby thousands lose their teeth in the soundest condition. Mineral, natural and artificial teeth, from one to a complete set.

Tooth tincture 5s; Tooth Powder 2s 6d.

N.B. Personal references in Oxford and also authentic written testimonials can be produced of the most difficult cases.

In March 1837 Mrs Roper came to London for The Season and was to be found 'at Mr Ward's, No. 313 Regent Street, Portland Place'.⁴ She was still working from this address a month later⁵ but by this time her advertisement had become much more extravagant:

PRESERVATION OF THE TEETH AND GUMS

MRS ROPER, DENTIST AND CUPPER. (Sister-in-law to the present Lord Teynham) from London and Brighton. Mrs R's highly approved and unprecedented principle of extracting Teeth, attended with ease, expedition and whereby pain is comparatively superseded, has rendered her so fortunate as to obtain the praise and admiration of the most eminent of the faculty.

Teeth cleaned if ever so discoloured, and rendered white and beautiful without pain to the individual or injury to the enamel, with every operation connected with the Teeth and Gums, totally eradicating scurvy, &c, and other painful affections, so truly injurious to the preservation of the teeth and health. Mrs R recommends parents to attend particularly to children's teeth from six to ten years of age.

Mrs R's invaluable tooth tincture, as a preservative for the Teeth and Gums; also a preventive or cure for the Tooth Ache. Sold in bottles 5s – Tooth Powder 2s 6d.

Mineral, Natural and Artificial teeth, from one to a complete set, executed on the most accurate and scientific principles – Moderate Terms.

Stopping with Gold and Silver, Mrs R witnessing the failure of cement generally.

At Home, mornings from 9 till 12. Families attended at their residences.

Letters post paid.

Mrs Ropers Antibilious and Aperient Pills from the recipe of an eminent physician. Sold only by herself, in boxes at 2s 6d each.

Mrs Roper's advertisements were very similar to those of other dentists at the turn of the 19th century. They routinely promoted the experience and range of

³ Jackson's Oxford Journal (Oxford, England), Saturday 26 November 1836, issue 4361.

⁴ Ibid, Saturday, 4 March 1837, issue 4375.

⁵ Ibid, Saturday, 22 April 1837, issue 4382.

skills of the dentist and offered glowing testimonials from satisfied patients. The practitioners also frequently sold their own patent medicines. This advertisement confirms the fact noted by other historians: "it was the practice among many dental practitioners to visit patients in their own homes."⁶ All the instruments necessary could be transported in small cases which could be carried in a waistcoat pocket. It also wasn't unusual for dentists to work from a variety of locations. In the space of eighteen months Mrs Roper planned to work in Oxford, Tunbridge Wells, Hastings, Brighton, Leamington and Cheltenham. Other examples of this type of practice can be found:

Mr Mallan, in 1833, respectfully acquainted:

The nobility and gentry of Norfolk that in consequence of numerous applications for his professional services, he is obliged to postpone his departure till the first of July, until which period he may be consulted on Mondays and Tuesdays at Mr Saddler's, tailor and draper, in Lynn, on Wednesdays, Fridays and Saturdays at Mr Critchfield's in Norwich and on Thursdays at Mrs Short's lodgings in Yarmouth.⁷

Mr Alex, in 1836, acknowledged:

The distinguished patronage with which he has been honoured since the commencement of his professional visits to Oxford, and respectfully acquaints his friends that he may be consulted at Mr Messenger's, opposite Balliol College, Broad-street, one week in every month.⁸

Mr Lukyn, in 1837, stated he was "the matriculated dentist to the university of Oxford and family visiting dentist to the Midland Counties". He apologised that several County families who wanted to consult him would have to wait to receive the benefits of his professional services "until the next circuit as his previous engagements compelled him to return to Oxford".⁹

Where Mrs Roper surpassed all her contemporaries with her self promotion was in her claim to be directly connected to the nobility and to be the sister-in-law to Lord Teynham. This deserves further examination. The dates of this claim in her various advertisements mean that she referred to the fourteenth Lord Teynham who was born in 1767, succeeded to the peerage in 1824 and died in 1842.

⁶ Lillian Lindsay, *The London Dentist of the Eighteenth Century*, *Proceedings of the Royal Society of Medicine, Section of the History of Medicine*, Session 1926-27, 20: 355-366.

⁷ *The Bury and Norwich Post & East Anglian* (Bury St Edmunds, England), Wednesday 19 June 1833, issue 2660.

⁸ *Jackson's Oxford Journal*, op cit., fn 3, Saturday 26 November 1836, issue 4361.

⁹ *Jackson's Oxford Journal*, op cit., fn 3, Saturday 22 April 1837, issue 4382.

The hereditary title of Baron Teynham was created for Sir John Roper in 1616, early in the reign of James I. The family remained loyal to the House of Stewart during the Civil Wars and were well regarded after the Restoration of Charles II, despite remaining prominently and devoutly Catholic. In 1716, Henry, the eighth Lord Teynham, renounced Catholicism and conformed to the established Church of England which enabled him to take his seat in the House of Lords. The title then passed down the direct male line until John, the thirteenth Lord, died childless in 1824. He was succeeded, as fourteenth Lord, by his cousin Henry-Francis Roper-Curzon, who was a grandson of the tenth Lord and eldest son of the Hon Francis Roper. A contemporary history of the peerage of the British Empire¹⁰ shows the fourteenth Lord's family. His father, the Hon Francis, had married Mary Lyttleton, 'and by her left at his decease in 1793, Henry-Francis, (14th Lord Teynham), Edward, and Charles (who died in India)'. In addition the Hon Francis had two daughters, 'Maria (deceased) and Charlotte'. Henry-Francis, therefore, can be seen to originally have had two brothers. Charles had died in India sometime before his father's death in 1793, leaving only Edward available to be identified as the husband of Mrs Roper the dentist.

The legal restrictions preventing the dispersion of the hereditary Teynham estates had been removed by the twelfth Lord, Henry, in 1789 and much of the money previously attached to the title had been distributed among his close family. When Henry-Francis succeeded as fourteenth Lord in 1824, he inherited an honourable title, but very little money. With a large family to support, he was not rich. Henry-Francis took his seat in the House of Lords in February 1825. He was politically active throughout his life and this caused him many problems. A contemporary observer noted that, in supporting Catholic Emancipation, 'Lord Teynham provoked the hatred of the Tory Party, and their malignity was augmented by his publication of a pamphlet, entitled 'How it must work', on the subject of reform in the House of Lords. In this pamphlet, Lord Teynham had the boldness to point out the necessity of reform in the Lords. His words brought down on him a torrent of malignity which has been beating down upon him from that time (1832) to the present'.¹¹ The fourteenth Lord was therefore a man with powerful enemies. Without the protection that a large fortune would have brought him he had to be very careful of his reputation and that of his family.

Although the 19th century was a time of increasing social change, it was still an era where the class system was dominant. Those who were involved in trade of any sort were considered socially inferior. This was the world of Mrs Roper. It is surprising that a woman who married into an aristocratic family would have worked at all; and even more surprising that she would have worked in an

¹⁰ John Burke, *A genealogical and heraldic dictionary of the peerage and baronetage of the British Empire*, London: Henry Colburn, 6th edition, 1839, pp 1027-1029.

¹¹ William Carpenter, *Peerage for the people*, London: Published by the author, 1837, pp 716-717.

occupation that was considered to be 'of very lowly status'.¹² Two articles from newspapers of 1827 have recently been found. Perhaps they help to tell Mrs Roper's true story?

**The first article:¹³
Mansion House, London – Melancholy Case**

The first article reported:

A female dressed in faded mourning was on Friday introduced to the Lord Mayor as a person deserving of the aid of the benevolent. She had lately sought shelter at the Refuge for the Houseless and appeared to be in a state of great mental suffering. She said she was the widow of the Honourable E Roper, (brother to Lord Teynham) who died in the year 1815; that she had subsisted on the small means he had left her, till last year, when they failed her, and having no parents living, nor relations to apply to, and being refused relief by Lord Teynham, she was plunged into a condition of great misery. She had been turned into the street by her landlady, being unable to pay her rent, and she had been compelled to wander about the streets during the late severe weather; at length she was directed to the Refuge for the Houseless. She said she was the daughter of the late Captain Rivit R.N. and that she was married to Mr Roper in 1809, being then just from school and little more than 14 years old. She had seven children by, and lived happily with her husband till he died; her children were all dead. She had occasionally been relieved and kindly treated by Dr Pettigrew and by Messrs. Smith, Payne and Smith, but Lord Teynham had declined offering her any aid. Her sufferings had been such that she had been driven to the verge of suicide, as those who knew her in her prosperity had all neglected her in the hour of her distress. She had failed in her endeavours to get employment as a dentist for which business she was duly qualified, having studied it under a very skilful surgeon. Her ardent wish was to obtain some employment by which she could maintain herself.

The second article¹⁴

The second report gives additional information:

The Hon. Mrs Roper, widow of the late Hon. Edward Roper, brother to the present Lord Teynham, applied on Friday to the Lord Mayor under the following

¹² John Menzies Campbell, Nineteenth century dental incidents, in *Dentistry Then and Now*, Glasgow: Privately printed for the author by Pickering and Inglis Ltd, 1963, p 237.

¹³ *The Leicester Chronicle: or, Commercial and Agricultural Advertiser* (Leicester, England) Saturday 10 February 1827, issue 845.

¹⁴ *Jackson's Oxford Journal*, op cit., fn. 3, Saturday 10 February 1827, issue 3850.

distressing circumstances: - She stated that she had been for the last week a resident in the receptacle for the Houseless Poor in Grub-street, and had there passed her nights in company with all the filthy and miserable beings who are compelled to seek shelter there. She stated her maiden name to be Mary Rivett, daughter of Captain Rivett of the Royal Navy; that she was married to the Hon. Edward Roper 18 years ago last March; that he was then a Lieutenant in the Army and she accompanied him when on his military duties to Ireland and various other places. At the time of her marriage she was not fourteen years of age; her husband died about seven years afterwards, during which period she had seven children who were all dead; her husband possessed an annuity of £2000 during his life, but he dying without having a child alive, there was no provision for the widow and she was left destitute; she had since applied herself to the business of a dentist and had by that means gained a respectable livelihood, but, through unforeseen circumstances she had been reduced to such a state of abject misery as to be compelled to seek shelter in the Refuge for the Houseless. She stated that she had applied to Lord Teynham for relief, to which he replied "I am as poor as a rat; really I am as poor as yourself."

Mrs Roper further stated that "her husband was eldest brother to the present Lord Teynham and had he lived he would have succeeded to the title; adding that some time since, being in very great distress, she applied to the parish officers of Lambeth for relief and they gave her four pounds, and applied to Lord Teynham, in the hope that to prevent exposure, he would do something for her; but his Lordship refused to assist her".

Mrs Roper convinced many who heard her. A Gentleman from the Houseless Committee stated:

He had made thorough enquiry into the poor lady's case and was perfectly satisfied that her story was true. He had in consequence applied to Messrs. Smith, Payne and Smith, the bankers, to receive any subscriptions that might be sent for her relief, which that firm had kindly consented to do.¹⁵

The Lord Mayor was so moved by her story that he gave the unfortunate lady two guineas from his own pocket.¹⁶ However immediately the Lord Mayor's office reopened the following Monday:

Lord Teynham waited upon the Lord Mayor to deny the general truth of the statement made to his lordship by the female who was brought before him from the Refuge for the Houseless. The Lord Mayor referred the noble peer to the gentlemen of the committee for the management of the refuge who gave her relief, and enquired into the circumstances of the case, and who would better

¹⁵ Ibid.

¹⁶ *Leicester Chronicle*, op cit., fn 13.

satisfy his Lordship as to the evidence which had been received in support of her case. Lord Teynham then went in search of the committee, but we believe he did not succeed in finding them. His Lordship, we understand, complained where he went that such a liberty should be taken by the press as to mention the name of a Peer of the realm in such a manner as to reflect upon him.¹⁷

Lord Teynham then gave a statement to the Mayor in which he said: He buried his brother in 1814. The latter, he declared, married in 1802, Anne Smollett, at the Church of St Anne, Soho; they disagreed and separated, and she was living at the time of his death, and has since (his Lordship was told) married again. Therefore 'Mary Rivett' could not be his widow. She was not the daughter of a captain in the navy but of some 'low man' in Norwich where, his Lordship believed, she had a sister married to a manufacturer. Until 1824, he declared that he never heard or saw this woman, nor did he ever know of her connection with his brother, Mr E Roper, before then. She then, he presumed, thought she could extort money from him by threatening to expose in the newspapers the follies of his late brother.

His lordship, who seemed to have minute information, said his brother's connexion with her began about 1810, consequently she could not have had seven children by him, nor did he believe that she had any. His lordship declined from the first having any intercourse with her as she had no reasonable claim upon his family for support, whatever might be her misfortunes. His Lordship denied that her statement had any foundation whatever. He added moreover, that supposing her to have any just claim, he had ten children and his fortune was not sufficient to meet it. He denied that he had any other income than that which he derived from his Lordship's bounty.

His Lordship "succeeded to his title from his first cousin, not from his father. Mr Edward Roper, being his Lordship's younger brother, could not, of course, be the Hon E Roper".¹⁸

The newspaper report felt that it was requisite to state 'the circumstances under which the female was received at the Refuge for the Houseless and brought before the Lord Mayor. First, that she was undoubtedly in a state of extreme distress. Secondly, she produced a certificate of her marriage with Mr E Roper at Marylebone Church in 1809. According to his Lordship's statement it must be a forgery, or his brother must have contracted the marriage criminally. Then, she produced letters and documents from other persons, from Mr Fentum, the music-seller, and others. Messrs Smith, Payne and Smith, who had been referred to, declared they knew her and had opened a subscription, and were ready to receive subscriptions again in her behalf'.¹⁹

¹⁷ Ibid.

¹⁸ Ibid.

¹⁹ Ibid.

These factors led the Lord Mayor to conclude Mrs Roper's case could be depended upon, especially as it was his belief that:

Impostors never can do anything more fatal to their career than to allow the public statement of their cases at such a place as The Mansion House since it is sure to elicit the best existing evidence for or against them.²⁰

It was eventually decided that a further inquiry would be made "into the authenticity of the certificate of marriage produced by the applicant, and also into other parts of her case to prove whether or not she may be considered deserving of the relief sent for her, or to any additional aid".²¹

Lord Teynham's claim that his brother Edward Roper married Ann Smollett can be confirmed.²² The records show this wedding took place on 24 February 1801 at St Anne's Church, Soho. This was then, as now, a fashionable Church within the Diocese of London. However, it is also possible to confirm that a marriage between Edward Roper and Mary Rivett took place on 21 March 1809 at St Marylebone Parish Church, another London Church. This evidence supports the story of Mary Rivett that she was indeed married to Lord Teynham's brother. Unfortunately for her it appears this marriage was bigamous.

Dental training and practice

Following her husband's death in 1814, when she would have been barely nineteen years old, Mary Roper somehow managed to obtain training as a dentist with Charles Gresson of Edinburgh. She completed it in 1816. Initially she gained a respectable livelihood, but when this failed she was forced to seek help. Lord Teynham first became aware of her in 1824 when she approached him for support. He declined to help her and by 1827 she was utterly destitute. Eventually someone must have helped her for advertisements show she was established as a dentist by 1836. However, she did not claim to be Lord Teynham's sister-in-law until her advertisement of 1837. Thereafter this claim was never absent.

The final advertisement found for her dates from 1839.²³ It was her most comprehensive yet and stated her claims to be placed firmly among the ranks of skilled and experienced dentists of the day:

MRS ROPER, DENTIST (Sister-in-law to the present Lord Teynham) from London and Brighton. No. 17 BROAD STREET, OXFORD
Mrs R returns her sincere thanks to numerous Gentlemen of the University, Medical Gentlemen, and inhabitants of Oxford generally, for the distinguished

²⁰ Jackson's Oxford Journal, op cit., fn 14.

²¹ Leicester Chronicle, op cit., fn 13.

²² London Metropolitan Archives.

²³ Jackson's Oxford Journal, op cit., fn 3, Saturday 19 January 1839, issue 4473.

patronage conferred upon her during eight successive months, and good practice in the years 1836 and 1837, more particularly in a profession so usurped of late years by numerous puffers, with exorbitant charges, equally injurious to the public and the profession with a deficiency of skill in doing justice to those employing them. Every operation connected with dental surgery, and all diseases and affections, particularly the scurvy in the gums, that bone destroyer of the finest sets of teeth at the earliest period of life, in the soundest condition, if not attended to in time. Mrs R entreats parents to pay early attention to the irregularity of their children's teeth from six to ten years of age. Natural, Artificial and Improved Mineral Teeth, with or without ligatures. Extracting the roots previous to fixing them for the comfort of the wearer.- Mrs R's invaluable Tooth Tincture for toothache, cold in the gums, and also for cleaning and preserving the teeth. Sold in bottles at 5s: also her generally approved Tooth Powder at 2s 6d. - Antibilious and Aperient Pills from the recipe of an eminent Physician. These Pills have met with approval by parties giving them a trial. N.B. Personal references in Oxford, and authentic testimonials of the most difficult cases.

After receiving assistance to start her own practice Mrs Roper was clearly able to support herself. She provided a full range of treatments including treating gum disease, carrying out extractions, providing dentures of every "modern type" and treating irregularities of children's teeth. She advocated cleaning and preserving teeth and was able to supply her own tooth powders for this purpose.

Mrs Roper succeeded in her chosen profession, serving her patients equally as fully as the many male dentists working at the time and can be regarded as an example to later women practitioners.

Figure 1 Field Lane Refuge for the Homeless which would have been similar to the Refuge for the Houseless Poor in Grub Street where Mrs Roper had the misfortune to spend some time [copyright Wellcome Images Collection].



19TH CENTURY DENTISTS IN MALTA: MATTHEW COLE YEO[†]

George E Camilleri*

A paper in the July 2010 issue of *Dental Historian*¹ mentions the joint arrival of Thomas John Jenkin and Matthew Cole Yeo in Malta in 1860. However Yeo was already living in Malta and this was his return from one of his frequent visits to England. He had first arrived in Malta from Marseilles on the 'Medina', nine years previously, on 15 February 1851. In his first advertisement in 1852, Yeo described himself as a surgeon dentist from 96 New Bond Street, London. The Malta address given was 42 South Street Valletta, which was actually a lodging house run Mr G Muir. It was common for visiting dentists to commence their clinical practice from their lodgings or hotel. He stressed his intension to settle in Malta. Besides having testimonials from leading members of the profession he promoted a superior mode of making artificial teeth as well as a new stopping, which does not discolour or oxidise. At that time the local papers were strongly advertising Mr Howard's White Succadeneum, prepared by Thomas Howard, surgeon dentist of 17 George Street, Hannover Square, London. By the following year Yeo had moved to 42 Strada Reale, Valletta, Malta's leading street, later to No 32 and finally in 1855 to 52 Strada Reale. In 1859 he went for 4 months to England and on his return he advertised that he had the patent right of use for the new system of artificial dentistry utilising vulcanite rubber compound instead of gold as a denture base. In 1851 Nelson Goodyear in the United States had patented an improved method to produce hard vulcanite suitable for denture use. There appears to have been some rivalry between Yeo and a Maltese dentist, Alessandro Preziosi who, in 1860, also emphasised his use of vulcanite dentures without however mentioning that he was in possession of the requisite patent. In 1864 the Goodyear Dental Vulcanite Company was founded and every dentist had to obtain an expensive licence to use the material and pay a royalty for each denture made. I have no evidence that this was enforced in Malta. In 1860 Yeo again went to England "for a change of air as well regarding some very important improvement in the new system of Dentistry". Accompanying him on his return on the 'Demetrius' from Liverpool was the young dentist, Jenkin who joined his practice.

[†] Based on a paper by G E Camilleri, Pen pictures of 19th century dentists in Malta: Thomas John Jenkin, *The Dental Probe* [The Maltese DJ] 2009; 33: 16, by kind permission of its editor, Dr David Muscat.

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¹ G E Camilleri, Pen pictures of 19th century dentists In Malta: Thomas John Jenkin (1842-1917), *Dental Historian* 2010; 52: 41-2.*

We know little of Yeo's family life. His wife, Mary Ann died aged 51 years on 4 June 1870 and was buried at ta' Braxia (the Protestant cemetery). His daughter, Georgina Caroline, married William Lamplush Hervey of Carlisle, in 1872. Yeo died on the 30 March 1873 and was buried next to his wife at ta' Braxia Cemetery. His estate, valued at under £900, was administered by Rev George Wisely, a Methodist minister, and William Hardman, two leading members of the British community in Malta. Mr T Jenkin, and later his son George Jenkin, carried on working in this same practice till 1937, so that these three gentlemen between them ran this dental practice for 85 years.

THE BARON DOCTOR CORNELIUS VER HEYDEN DE LANCEY AND THE WOMEN IN HIS LIFE

Stanley Gelbier*

Introduction

The Baron Doctor Cornelius Ver Heyden De Lancey's professional life¹ and his philanthropic foundation which financed the award of medals and fellowships² have been described in earlier papers. He made such awards to the many schools and universities with which he had been involved over a long professional lifetime. There were a large number as he qualified as a lawyer and doctor, as well as a dentist; and undertook postgraduate as well as undergraduate studies. The Baron was also interested in art, history and literature.

However, this paper describes another side to his life. It is a story of romance; of a person who decided early in life to marry someone he had known since she was a young girl, but who had to wait for many years until finally they wed.

The first love

Cornelius Verheyden was born on 18 July 1889 in Holland. In 1900 he entered the Middelburg Gymnasium or high school.³ On the first day he met Henrietta (Getge) Johanna de Vej Mestdag, the eldest daughter of a Zeeland editor. Cornelius later recalled that as Henriette had a head cold on that first day he visited his father's surgery in the lunch hour to get a remedy for the "very nice girl with beautiful, blond, long hair and curls". His father gave him some nasal drops and an inhalant, assuring him they would bring immediate relief. Next day Cornelius was upset to hear that Henrietta's mother prevented her from using them; first because she should never accept anything from strangers, secondly that nothing should ever be put into the nostrils or ears.

Cornelius concentrated on the study of mathematics, chemistry, physics and modern languages. Henrietta read Greek, Latin, modern languages and religion,

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¹ S Gelbier, The Baron Doctor Cornelius Ver Heyden De Lancey (1889-1984): dental surgeon, doctor and lawyer, *Journal of Medical Biography* 2006; 14: 54-61.

² S Gelbier, The Baron Doctor Cornelius Ver Heyden De Lancey: his foundation and benefactions, *Journal of Medical Biography* 2000; 8: 177-182.

³ C Verheyden de Lancey, *Autobiography: Attempt at a Short Autobiography of the Baron Dr Cornelius Ver Heyden De Lancey*, Undated mimeograph, p 1.

graduating in these subjects from the Gymnasium in 1910 at the age of 21. At the same time she became a lay preacher. They were always helping each other with their respective subjects. According to Cornelius⁴ it was during this time that he became convinced that they would marry as soon as he could provide for her. He said she was "a great stimulus to aim at early independence by hard and constant work". However, events separated them.

A personal tragedy

Having travelled to gain a number of medical, dental and legal qualifications,⁵ Cornelius arrived in London as World War I began. Once the hostilities started he could not visit nor write to anyone in Holland. When the Armistice was signed in November 1918 Cornelius wrote to his mother enclosing a letter for Henrietta. He told her he had a west end of London practice and his own house, and wanted to marry her. Cornelius received a reply from his delighted parents who thought their son had died during the war. However, he said one of his worst moments came when he read that Henrietta had also thought he was dead and had married.⁶ She was now Henrietta Kingma, with two daughters: Magelina Elizabeth aged one year and Ymkje Anoinette who was a few months old. Cornelius was shattered by the news and had one of the most miserable Christmas holidays he had ever experienced. Unrealistically he said he was tempted to travel to Holland to plead with Henrietta to divorce her husband and marry him. Fortunately, common-sense prevailed and he left her alone. Cornelius could not bear to live alone in Holland so he remained in England, where his mother joined him.

A romantic interlude

Although his autobiography suggests that Cornelius was distraught over losing Henrietta, one piece of information is missing from that document. There is mention that he gained the Licence in Dental Surgery from the Royal College of Surgeons of Edinburgh in 1914. The possession of that qualification was checked by the author in the 1914 *Dentists Register*. The name and qualifications of Cornelius Verheyden were there. However, immediately below was a major surprise; an entry for Mrs Maria Helena Verheyden. Edinburgh Dental School confirms⁷ that Maria of Rotterdam was already Mrs Verheyden when she joined the class at the same time as Cornelius. That was in October 1913 having already received one year's dental instruction at Utrecht Dental School. It would seem

⁴ *Ibid.*, p 2.

⁵ Gelbier 2005, op cit. fn 1.

⁶ Ver Heyden de Lancey, op cit, fn 3, p 5.

⁷ Mrs J P Rennie, Secretary to the Edinburgh School of Dental Surgery, Personal communication, 23 March 1984.

that Maria was a wife who Cornelius wanted to forget as she is not mentioned in his autobiographical notes.⁸

Although originally registered to study medicine at the University of Leiden Cornelius changed his mind and entered the Utrecht Dental School. There, he met his fellow student Melle (Maria) v.d. Kloot Meyburgh. They married a few years later and went to the USA, where both gained a Doctorate in Dental Surgery from Pennsylvania in 1913. The couple then travelled to the UK where Cornelius had many friends. After a year of study in Edinburgh they gained the LDS from the Royal College of Surgeons of Edinburgh. They then established two practices in London: at 86 Lee Road, Blackheath and 47b Welbeck Street Cavendish Square.⁹ In 1919 they both moved to 21 Welbeck Street.

By 1916 Maria was dental surgeon to the South Finsbury Maternal and Infant Welfare Centre, the Women and Children's Dental Clinic in Pentonville Road, and the Hammersmith Maternal Centre and Children's Clinics. In 1917 she also worked at the Borough of Bermondsey Maternity Centre. In addition, she became an inspecting dental officer for the LCC Public Health Department and a dental surgeon to its school dental service. Maria was a member of the British Dental Association (as was Cornelius) and the International Dental Federation. In 1916 she wrote an article on 'Women in Dentistry' for the *Daily Sketch* newspaper.

Cornelius spent much of the war years working at St Bartholomew's hospital. After leaving Bart's he felt desperately unhappy. In 1923 following the death of his father at the age of sixty-three - "the best friend I ever had" - he became depressed. At that point, at the age of thirty-four, he assumed the title of Baron Ver Heyden de Lancey.

Unfortunately, neither their marriage with Maria nor their partnership lasted and they separated. In 1925, Cornelius was registered at both Welbeck Street and at 16 Via Vittorio Emanuele in San Remo on the Italian Riviera.¹⁰ By 1926 Maria was still in Welbeck Street but by then Cornelius was living and working in Italy, at the Via Nazionale, Rome. The following year Maria's address was shown as 'c/o the Pioneer Club, 12 Cavendish Square'. By 1931 her name no longer appeared in the UK *Dentists Register*.¹¹

The Baron said¹² that in 1924 he decided to abandon everything in England: his house, practice in Welbeck Street, hospital and institutional appointments, weekend cottage near Henley and even his beloved horse. As with Maria he left behind a London forwarding address: 'c/o the Royal Automobile Club, London'.

⁸ An insight was given by his son-in law, R P H Ritter, who felt that the autobiography was written when the Baron's memory was failing, Personal communication, 8 February 1984.

⁹ *Dentists Register*, London: General Medical Council, 1915.

¹⁰ *The Dental Surgeons' Directory*, London: J&A Churchill, 1925.

¹¹ *Dentists Register*, London: General Medical Council, 1931.

¹² Ver Heyden de Lancey, op cit, fn 3, p 6.

Rome and Florence

After her husband's death his mother's health was severely affected. To avoid the need for her to endure cold, wet and misty winters in Holland or England the Baron suggested she should live comfortably in his small apartment at 16 Via Vittorio Emanuele in San Remo on the Italian Riviera, "amongst flowers and sunshine". He also decided to start a new life in Italy, a country appreciated for its art, flowers, music, opera and sunshine.

The Baron spent much time in Rome and Florence where he undertook medical, oral and legal work. In Rome he first lived at 87 Via Nazionale which he had possessed since 1915. The Baron soon moved to 25 Piazza Mignanelli, an apartment with his dental surgery attached. In Florence he practised at 6 Lunzarno Corsini.

When his mother's health improved she travelled to Rome to "keep house" for the Baron. She stayed at the Piazza Mignanelli until her daughter Walravina Johanna Van Ramshorst returned to Holland with her own two daughters. Doubly qualified Walravina wanted to continue practising as a medical pathologist and oral and dental surgeon, having so worked in Sorabaya in the Dutch East Indies (now Indonesia).¹³ Her mother accompanied Walravina to Holland to look after her home, thus enabling her daughter to continue in practice. The Baron felt deeply that he was losing a "faithful and consoling companion" to his everlasting sorrow and despair.¹⁴ During their years together the Baron had learned much about his mother and "her embracing love for her husband". To his distress, they never met again. She died in Rome during World War II at the age of 80 years.

The Baron's life in Italy was extremely hectic: "Working during the whole day, resting or having some entertainment (opera, concert or theatre and private social meetings) after 9 pm".¹⁵ For some time he travelled between Rome and Florence, working in both places. On Friday nights he journeyed to his apartment *Les Turquoises*, in Monté Carlo's Descente de Larvotto.

The English friend

In 1929 Margery Hunter Woods was a young journalist carrying out research in the Reading Room of the British Museum. She had helped to review Italian books for *The Times Literary Supplement* and to write articles for *The Times* and the *Spectator*.¹⁶ Margery was asked by the Museum's Director if she would go to Rome to supervise a British book exhibition at the Palazzo Borghese at the International Congress of Librarians (which was opened by Mussolini). She knew Italian well having previously worked on a British newspaper in Florence. Margery thought the Baron's 1924 lectures at Florence University may well have been attended by the young medical student, Pasquale Conti, to whom she became

¹³ *Ibid*, p 7.

¹⁴ *Ibid*, p 8.

¹⁵ *Ibid*, p 9.

¹⁶ M Green, Personal communication, interviews and letters, 1983.

engaged. The engagement was soon broken off by her parents and she was "hurried back to Hampshire". In Rome Margery renewed her friendship with Noël McKern, an English woman she had met in Florence who was married to Bo Sheldon an American sculptor. Margery frequently dined at the Sheldons apartment in the Piazza Mignanelli, close to where the Baron lived at work.¹⁷ Through their mutual interest in painting, sculpture, music and the arts in general he became a close friend of the Sheldons and met Margery. Perhaps because she was the daughter of an English general medical practitioner the Baron accepted her within his small circle. She joined in his activities and got to know the Baron "better than most people".¹⁸ Margery recalled that although in some ways he was a solitary man with an undercurrent of melancholy, "he was convivial in company and a marvellous host and raconteur". After work the four of them frequently dined and danced in fashionable Roman venues or went to plays and concerts. Margery described vividly a dance garden called the *Casino delle Rose*, which was full of climbing roses.¹⁹ It was there that 'Corney', as the Baron was known to his friends, introduced them to the potent drink "Cherry Cobbler".

Corney had a magnificent collection of books in his apartment. He wanted Margery to include some of them in an exhibition she was arranging but it was not possible as none were British. Margery recalled he was writing, in his "spare" time a monograph on Francisco [François] Casanova, brother of the more famous Giacomo. Corney had a collection of warlike paintings by Francisco. When Margery returned to England at the close of the exhibition he asked her to find a publisher for his manuscript. However, none were interested as it would have been too expensive a venture because of the large number of illustrations.²⁰ When she broke this news Corney was very disappointed.

When Margery decided to return to England the Sheldons saw her off from Rome railway station. As Corney had business in Paris they travelled together. Margery was supposed to change onto the Dover train but she was enticed to stay in Paris. Corney knew the city well and during the next few weeks he showed her far more of that fascinating city than she could ever have hoped to see.²¹ They went to the Comédie Française, Opera and the Opéra Comique to see performances of *La Bohème*, *Lakmé* and *Mireille* and studied their libretti and scores. They visited the Cluny Museum, Fontainebleau, Les Invalides and Versailles, lunched in the Bois de Boulogne and at St Germain, and had evening drinks and coffee at the Dôme and the Rotonde. At the newly opened Brasserie Coupole Corney pointed out "Matisse, Léger, Mistinguette, Aragon, Dérian" and dozens of other celebrities without Margery realising how celebrated they were or would become. Because he considered Margery was dowdily dressed "in the sloppy, frumpy, long-waisted English fashion of those so-distant days", Corney took her to a couture house. He chose "two black satin dresses of impeccable cut

and distinction" with a matching black felt "slouch hat". The clothes thrilled Margery at the time but she realised they were unsuitable for her Bohemian life in London: "That of a penurious writer in sleazy Bloomsbury lodgings". However, she said they certainly improved her morale.

Corney had a *pied-a-terre* in the Rue des Jeuneurs but Margery stayed at the Hotel Quai Voltaire. They visited the riverside bookstalls where he bought her numerous French paperbacks, including *La Grande Mademoiselle*, his rather unkind nickname for her. During this time Margery got to know the heart and mind of "this most unusual and brilliant man".²² Much later she realised "he was a polymath and how wide and generous and far-flung his interests were, what moral and physical courage he possessed and what formidable artistic integrity".²³ Corney loved talking on a wide variety of subjects and advanced many original and conflicting views. By the end of a day in his company Margery said her mind "was usually in a whirl". After a while she returned to her bed-sitter in London.

Towards the end of the year Corney visited London on business and sought her out. As Margery had been unwell, Dr A E Russell, for whom she worked, and his wife insisted she stay with them for a short time in their Upper Wimpole Street flat. Corney was directed there from Margery's normal abode in Tavistock Place. For a few days they resumed their "gay Parisian-like night life", for example, going to the first night of Noel Coward's *Bitter Sweet* and then on to supper at the Trocadero Restaurant. Returning very late to Upper Wimpole Street they found Dr Russell, "after the fashion and convention of the twenties", awaiting her return. At the end of a tiring day at St Thomas' Hospital and with his private patients he was rather annoyed. Corney again turned his attention to Margery's clothes. Insisting they were unsuitable for the English climate he took Margery to Harrods and bought her a "magnificent fur coat". Margery's employer was filled with grave suspicions and misgivings: they considered themselves in *loco parentis* and wondered what she had been up to.

Corney returned to Rome and Margery to Bloomsbury. With his encouragement Margery helped to stage a 1930 Royal Academy of London exhibition of Italian painting, equal to the 1984 exhibition *The Wonders of Venice*.²⁴

Before 1929 ended Margery went to live in a castle near Pisa where she helped a Marchesa to compile a book. The Niccolini family also owned a Florentine palace to which they all moved. Margery again briefly met Corney. They continued to discuss the possibility of her helping to translate some of his French material into English and getting it published.

In the following year Margery returned to Rome, dining and wining with Corney and the Sheldons. The latter had moved to their converted an old farmhouse at Anticoli. Corney now had an apartment elsewhere with a housekeeper and two little black pug dogs of which he was extremely fond but continued to practise dentistry in Mignanelli.

¹⁷ Ibid.

¹⁸ Ibid.

¹⁹ Ibid.

²⁰ Ibid.

²¹ Ibid.

²² Ibid.

²³ Ibid.

²⁴ Ibid.

Margery's new assignment was to help Mrs Eugenie Strong, an eccentric scholar famous in the Rome and Florence of the 'thirties, to complete an overdue chapter on Etruscan Art for the *Cambridge Ancient History*. Corney, Margery and the Sheldons resumed their evening meetings. At weekends they visited Aquae Albulae to swim in the sulphur springs, to Ostia and to the seaside at Fregene. In his cousin Marita's (the Baroness de Hutschler) car they travelled to Montecassino for simple meals of wine and bread with the monks. Margery became good friends with Marita who also wrote.

One evening in 1931, Margery visited Corney's surgery because of an aching wisdom tooth. The extraction was difficult and the local anaesthetic was not very effective. Marita was staying with Corney and they did their best to ease Margery's considerable pain. She woke next morning in her pensione in the Via San Vitale with a swollen cheek and unfit for work. With a scarf round her head Margery went to work but an unsympathetic Mrs Strong was not happy. Seeing Margery's bruised face Mrs Strong asked what had made her choose such a busy time for treatment. Coming on top of previous cutting remarks about the shallowness of Margery's "uneducated, cliché-ridden mind," it made her desperate to escape from Mrs Strong at any cost.

Margery quickly plunged into another engagement and after returning to England with her fiancé early in 1931 she rather hastily married to become Margery Cornish.²⁵ As both were broke they travelled 3rd class. Corney saw them off but strongly disapproved thinking the marriage was very unsuitable.²⁶ Indeed, many years later he wrote:²⁷ "I have always kept in my memory the last talk with you on the platform at Rome railway station." He asked Margery if she remembered his warning that she was in the wrong hands:

I told you that if the man you were going to marry left you in the lurch or if he really should marry you and treated you in any way badly, to get straight to your parents' home and contact me in the knowledge that I would always come to the rescue as far as I was able to do so.

He was correct. In fact, by the time that divorce proceedings began Margery had a five-year-old daughter. Corney said he had never liked the chap and had never trusted him. In his letter to Margery, Corney enclosed "an essay" which he had written in about 1933 which he said was "a tour de force". He assured her he still kept the bundle of sonnets which she had composed, "I read them over many times". He went on: "I never forget how well we danced the Tango and a 'pas de deux', and some other sweet memories one cannot write but only think and dream about". The letter was signed "My love, my dear, as ever, Corney". They clearly had been very close at one time.

²⁵ M Green, Draft autobiography *The years of experiment*, volume II.

²⁶ M Green, letter to S Gelbier, 29 January 1984.

²⁷ C Verheyden, letter to M Green, 3 August 1977.

Margery had re-married in 1948 and became Mrs Green. They had lost touch for forty-six years but Margery remained full of admiration for Cornelius. As she said many years later:²⁸

I would say that Baron Ver Heyden de Lancey is a member of a tribe often despised, derided, or misunderstood, in the present climate of opinion; an aristocrat *par excellence*, a nobleman in every sense of that often ill-used word.

In 1977 Margery read in the 'Peterborough column' of the *Daily Telegraph* that the Baron Ver Heyden de Lancey had been presenting awards to two doctors for their artistic talents. She was then able to contact him. From then onwards they stayed in contact. Margery later did some research for him, particularly examining and copying documents at the Public Records Office in Kew.

A new bride

At the outbreak of World War II the Baron was asked to check on the possibility of establishing military hospitals or convalescent homes in the Channel Islands which might receive wounded British soldiers. As he had recently married Josephine Marie De La Hanty the Baron took his new wife with him. Unfortunately, with the arrival of the Germans they were trapped on Jersey and stayed there until hostilities ceased.

When the war ended the Baron and Baroness settled in Jersey and he made a lot of money from wise investments. As there were no children they thought about how best to use some of his income. In November 1970 they set up a Trust incorporating both their family names: the De Lancey and De La Hanty Foundation, Limited as a Limited Liability Company under the Companies Laws (Jersey 1861-1968).²⁹

In 1971, Baroness Josephine Marie died and her sad husband was left alone.

The return of true love

Fortunately, romance soon came back into his life. The Baron (Fig 1) heard that his childhood sweetheart, Henrietta, had been widowed two years previously. He immediately went to see her in Holland to ask if she was prepared to fulfil his dearest wish and become his wife.³⁰ Like all larger than life romances Henrietta agreed and they married in April 1972, in Bussum, Holland. By then they were both aged 82 years. The Baron said that at long last he could become "deputy father of her two daughters". This happy state of affairs continued until 18 July 1984, when the Baron Doctor Cornelius Ver Heyden de Lancey's life ended at home on his ninety-fifth birthday.

²⁸ Green, op cit. fn 18.

²⁹ Gelbier, op cit, fn 2.

³⁰ Ver Heyden de Lancey, op cit, fn 3, p 14.

Figure 1 The Baron Ver Heyden de Lancey at the Victoria College for Boys in Jersey (courtesy of the Jersey Evening News)



Acknowledgements

I am indebted to the Baron's family and the De Lancey and De La Hanty Foundation for permission to use material which he accumulated over the years. Thanks are due to Mrs Verena Drouin, honorary secretary of the Foundation and Mr John Owen Davies of Gray's Inn, both of whom gave much helpful advice and assistance. Mrs Margery Green (née Woods) filled in much detail about the years 1929 to 1931 and kindly loaned to me some draft pages of her autobiography, *The Years of Experiment*.

THOMAS ROWLANDSON'S TRANSPLANTING OF TEETH: AN ANALYSIS

Melanie Parker+

Introduction

Most dental historians will be familiar with Thomas Rowlandson's cartoon *Transplanting of teeth* (1787) (Fig 1). One such print in the BDA museum's collection provides the ideal image to role play at the end of school visits to the museum (Fig 2): Pupils take on four key characters: a dentist, a poor boy 'donating' a tooth, the wealthy female recipient of his tooth and a further donor, a poor girl going out of the door. The role play enables pupils to recap on key messages promoted during the day such as reducing the amount of sugar we consume, that adult teeth have to last a lifetime and that people today have far more opportunities through knowledge and money to look after their teeth than our ancestors ever did.

Figure 1 *Transplanting of Teeth* by Thomas Rowlandson, 1787
(BDA Dental Museum, item number LDBDA : 7713)



This paper examines from exactly where Rowlandson drew his inspiration. Thomas Rowlandson (1756-1827) could have had a disadvantaged start in life due to his father's bankruptcy but after being taken under the care of an aunt and uncle his artistic talents were fostered. He studied at the Royal Academy Schools and in Paris and appears to have had a great talent as a traditional painter but turned

instead to satire. He became a pre-eminent recorder of everyday Georgian life, often its rougher side, perhaps informed by a spell spent squandering the fortune left to him by his aunt. Dentistry did not escape his eye and was the subject of at least two other images, prints of which are in the BDA museum's collection: *A French Dentist Shewing a Specimen of his Artificial Teeth and False Palates* (1811) and *The Tooth-Ache or Torment & torture* (1823).

References to tooth transplantation appear well before Rowlandson's image. The earliest reference in English was made by Charles Allen in *The Operator for the Teeth* (1685) which can be regarded as the first text book in English solely about dentistry. Following earlier references in other countries¹ Allen's comments imply that already, by the late 17th century, transplanting was not an infrequent operation:

Besides this Artificial way of Repairing the loss of Teeth, there is another that may be called Natural: which is done by takeing out the rotten Teeth or Stumps, and putting in their places some found ones, drawn immediately after out of some poor Body's head: which thing (tho' difficult) I know to be feasible enough, not only by my own Reason that tells me so, but by experience itself...²

Figure 2 School children role-playing Rowlandson's *Transplanting of Teeth* in the BDA Museum



¹ Guy de Chauliac in the 14th century and Paré in the 16th century.

² Charles Allen, *The Operator for the Teeth*, York: John White, 1685, pp. 10-11.

Allen, however, did not approve of the practice on both moral and practical grounds and suggested using animal teeth instead. Rowlandson's cartoon came virtually a century after Allen's book. In the intervening years we see several references to tooth transplantation. Pierre Fauchard described a transplantation which the recipient claimed lasted six years.³ However he did not include it in his list of 14 operations implying that Fauchard did not regard it as a key operation. Several dentists advertised transplanting of teeth in the 18th century including Michael Whitlock who seems to have been working from the 1730s to 1770s, primarily in East Anglia.⁴

Rowlandson's print, published in 1790 by William Holland of 50 Oxford Street, indicates that tooth transplantation had reached a new wave of popularity. This has often been attributed to its promotion by John Hunter. From 1763 Hunter spent five years providing advice, based on his anatomical studies and surgical experience, to James Spence.⁵ The latter was appointed 'operator for the teeth' to King George III in 1766. Hunter gave the operation a scientific validity through his writings, devoting a whole chapter to transplanting of teeth in his first work *The Natural History of the Human Teeth* (1771). In part two of the work *A Practical Treatise on the Diseases of the Teeth* Hunter continued for nearly 20 pages on the subject of transplantation: "Although this operation is in itself a matter of no difficulty, yet, upon the whole, it is one of the nicest of all operations, and requires more chirurgical and physiological knowledge than any that comes under the care of the dentist."⁶

Did Rowlandson have a particular dentist in mind when he drew his picture? Menzies Campbell argued that it was Bartholomew Ruspini, surgeon dentist to the then Prince of Wales (later George IV). Campbell seems to have a very convincing, although unreferenced source.⁷ The warrant on the wall calls the dentist 'Baron...'; Ruspini was to be appointed Chevalier (Knight of the Holy Roman Empire) in 1789. However Menzies Campbell's assertion that the dentist in Rowlandson's picture looks like Ruspini does not persuade the author. Nor did Ruspini advertise transplanting. Moreover he was known for his beneficence to the poor including being a key player in the establishment of the Royal Cumberland Freemason School in 1778 for the daughters of impoverished Freemasons and making his styptic available free of charge to the poor.

If Ruspini did perform transplantations perhaps Rowlandson chose him for his lack of transparency, unlike some of his contemporaries who openly advertised or wrote about the practice. They included Edinburgh surgeon Benjamin Bell who wrote enthusiastically about transplanting in his *A System of Surgery* and dentist

³ Pierre Fauchard, (1746), *The Surgeon Dentist or Treatise on the Teeth*, translated from the French by Lilian Lindsay, London: Butterworth & Co. (Publishers) Ltd., p. 143.

⁴ A S Hargreaves, *White as Whales Bone, Dental Services in Early Modern England*, Leeds: Northern Universities Press, 1998, pp. 135-6.

⁵ Jesse Foot, *The life of John Hunter*, London: T. Becket, 1794, p. 136.

⁶ John Hunter, *The Natural History of the Human Teeth, Part II, A Practical Treatise on the Diseases of the Teeth*, 2nd edition, London: J. Johnson, 1778, p. 94.

⁷ A proof before letters version of the print has 'Ruspini' on the door. Menzies Campbell, *Dentistry Then and Now*, privately printed, 1981, p. 64.

Robert Wooffendale who diverted from the opinion of his mentor Thomas Berdmore on this. Rowlandson could also have chosen a female dentist such as Mrs De St. Raymond who was practised in transplanting: "teeth from the front of the jaws of poor lads into the heads of any Lady or Gentleman"⁸ and did so: "without putting both patients to any anguish."⁹

Was Rowlandson inspired by John Hunter himself? Hunter never advertised himself as a dentist; rather he provided advice to James Spence. Perhaps the central dentist is based upon Spence who certainly offered transplanting; in an advert from 1769 in the museum's collection (Fig 3) Spence stated his:

New Method of transplanting Natural Teeth, from one Person to another, hath, in every Instance, given entire Satisfaction, and Answers even better than Artificial Teeth not only by preserving their Colour, but by fixing them, (without any Ligament) as firmly in the Jaw as if they originally grew there.¹⁰

Figure 3 Advert for James Spence, 1769
(BDA Dental Museum, item number LDBDA : 8481)



Nevertheless Hunter may have offered a physical helping hand to Spence as well as advice. The former was known for his strength and perhaps he is extracting the tooth whilst Spence is the other dentist examining the second female patient. Certainly the pair were widely consulted, if Jesse Foot is to be believed: "Spence soon found his house crowded by all the fashion of the age: the stock of beauty even to this day has experienced an increase by their consultations."¹¹

Maybe Rowlandson had no specific inspiration for his dentists but was targeting those who set themselves up with no surgical

background if the birds on the warrant on the wall are ducks and thus Rowlandson's dentists must be 'quacks'.

Rowlandson chose as his central figure and donor a poor lad. The brush at his feet is generally taken to be that of a chimney sweep's boy and in other hand coloured versions of the print he is coloured in black. Vicesimus Knox, ordained minister and headmaster of Tonbridge School, received a tooth transplant from a chimney sweep.¹² A sweep also appeared as a donor in Helenus Scott's novel *Adventures of a Rupee* (published anonymously in 1782) in which the chimney sweep, aged about 12 years old, had already lost teeth at the 'fore' of his mouth for his: "mother sold them when I was young, to a dentist, who transplanted them into the head of an old lady of quality."¹³

Rowlandson depicts three donors all of whom are young adolescents, as favoured by Hunter who stated that the tooth: "should be a full grown young Tooth: young, because the principle of life and union is much stronger in such than in old ones."¹⁴ Rowlandson differs from Hunter in making only one of his donors female which was the latter's preference: "for female Teeth are in general smaller than those of men."¹⁵ Another character in Scott's novel fitted Hunter's ideal: the chimney sweep's sister who: "...had nothing but her naked jaws, since she was nine years of age. It is but a poor comfort to her that her teeth are at court..."¹⁶

Rowlandson's donors do not seem outwardly to fit the healthy ideal recommended by Hunter: "...the new Teeth should always be perfectly sound, and taken from a mouth which has the appearance of that of a person sound and healthy."¹⁷ It seems likely though that only the really destitute would resort to selling a tooth; an example from France highlights the way transplanting was viewed when Fantine in *Les Misérables* sells a tooth after having first sold her hair and before then resorting to prostitution. Scott's pawn-broker agreed: "Though I have been much used to make money of the wretched, I swear I would rather beg in the streets, than ride in a coach by such means as these."¹⁸

Any number of wealthy women could have been the template for Rowlandson's caricature. The dentist claims high status patients with a warrant on the wall proclaiming him "...Dentist to her High Mightyness the Empress of Russia". Perhaps the recipient was Isabella, 4th Duchess of Rutland (1756-1831), who is known to have had a tooth transplanted into her mouth from a poor girl¹⁹ and whom

⁸ *York Courant*, 10 March 1775, quoted in Christine Hillam, *Brass Plate and Brazen Impudence, Dental Practice in the Provinces 1755-1855*, Liverpool: Liverpool University Press, 1991, p. 137.

⁹ *York Courant*, 10 February 1775, *ibid.*

¹⁰ BDA Dental Museum, item number LDBDA : 8481.

¹¹ Foot, *op cit.*, fn. 5, p. 137.

¹² Vicesimus Knox *Winter Evenings: or lubrications on life and letters*, Vol II, London, 1823, p. 122. Available at

http://books.google.com/books?id=UkkVAAAAYAAJ&printsec=frontcover&source=gbps_ge_summary_r&cad=0#v=onepage&q&f=false

¹³ Helenus Scott, *Adventures of a Rupee*, 1782, p. 214. Available at

<http://www.archive.org/stream/adventuresofrupee00scotiala#page/214/mode/2up>

¹⁴ Hunter, *op cit.*, fn. 6, pp. 99-100.

¹⁵ *Ibid.*, p. 101.

¹⁶ Scott, *op cit.*, fn. 13, p. 215.

¹⁷ Hunter, *op cit.*, fn. 6, p. 100.

¹⁸ Scott, *op cit.*, fn. 13, p. 215.

¹⁹ Osbert Sitwell, *Left Hand, Right Hand! An Autobiography*, London: Macmillan & Co. Ltd, 1950, p. 70.

Rowlandson depicted in at least one other cartoon *The Golden Apple or the Modern Paris* (1785). Certainly she became known as 'Duchess Was-a-Bella'. However if it was Isabella she has not aged well in the two years since *The Golden Apple* and at 31 years old was perhaps more likely to be the younger, married, woman on the right.²⁰

Certainly Rowlandson was correct in depicting his recipients as adults as Hunter says there was no need for transplanting teeth into those under 18-20 years old as any gaps between their teeth could be closed.²¹ Bell continued that there was also no point performing the operation on old people as "in old age, when many of the smaller blood-vessels become obliterated, it is not probable that any transplanted tooth, whether taken from a dead or a living subject, would ever become sufficiently firm".²²

Rowlandson has placed his wealthy recipient on a two-seater settee next to the ragged donor causing her evident discomfort and a consequent need for smelling salts. Here Rowlandson was following advice of the day on having the transplant as fresh as possible: "It will be hardly necessary to mention, that the sooner the Scion Tooth is put into its place the better, as delay will perpetually lessen the power upon which the union of the two parts depends."²³ Rowlandson's second dentist may be checking the state of his patient's gums prior to transplantation as: "In order to ensure success, the alveoli and gums must be perfectly sound. They must be free from scurvy and the lues venerea [syphilis]."²⁴ Certainly she was advised to make a pre-visit and: "... apply early, and give the dentist all the time he thinks necessary to get a sufficient number of Teeth that appear to be of a proper size etc."²⁵

Hunter was aware that successful transplants required a good fit and thus felt the operation was more successful with teeth nearer the front of the mouth:

The incisores, cuspidate, and bicuspid, can alone be changed, because they have single fangs. The success is greatest in the incisores and cuspidate than the bicuspid: these last having frequently the ends of their fangs forked, from which circumstance the operation will become less perfect. It is hardly possible to transplant the grinders, as the chance of fitting the sockets of them is very small.²⁶

Rowlandson's young male donor departing through the door seems to have provided an incisor but his female donor appears to have parted with a tooth further back.

²⁰ Rowlandson often used a technique which reversed his drawings to create the prints, hence this young woman is wearing a wedding ring.

²¹ Hunter, op cit., fn. 6, pp. 98-9.

²² Benjamin Bell, *A System of Surgery*, Vol IV, 3rd edition, Edinburgh, 1789, p. 317.

²³ John Hunter, *The Natural History of the Human Teeth*, Part I, 2nd edition, London, 1778, pp. 127-8.

²⁴ Bell, op cit., fn. 22, pp. 314-5.

²⁵ Hunter, op cit., fn. 6, p. 94.

²⁶ Hunter, *Ibid.*, p. 95.

Rowlandson's dentist seems to be using an elevator to loosen the tooth to be donated, before perhaps removing it with the forceps depicted lying, without care for cleanliness, on the floor. If this is the case Rowlandson's dentist has followed contemporary advice: "when it is possible therefore to take out the old tooth with the forceps, it is better to do it in this manner than with the key-instrument, which can scarcely be used without injuring the parts too much."²⁷ After the removal, if Benjamin Bell's advice was followed, the socket of the recipient was cleared of blood and the tooth was: "immersed for a few seconds in luke-warm water before being cleared of blood or any matter that may adhere to it by rubbing it gently between the folds of a piece of soft, old linen".²⁸ Even this precaution was not taken in the case of Vicesimus Knox who recounted that the tooth "was planted reeking with blood".²⁹

Depicting two more donors just leaving the dentist's room Rowlandson was again following the advice of the day: "The best remedy is to have several people ready whose teeth in appearance are fit, for if the first will not answer, the second may."³⁰ If a perfect fit wasn't possible then Hunter recommended using a smaller tooth. Where a female was the recipient this was more of a problem and Hunter suggested that: "When the fang of the Scion Tooth is larger than that which it is intended to supply, it must be made smaller, and only in that part where it exceeds. But the necessity of this should be avoided, if possible."³¹

If all attempts at using live teeth failed Rowlandson's dentist was, by implication, prepared to use teeth from corpses, with his sign on the door proclaiming 'Most Money Given For Live Teeth'. Hunter occasionally resorted to dead teeth:

If the appearance be not favourable, and it therefore be not probable that the Scion Tooth can be introduced...I would recommend to every dentist to have some dead Teeth at hand, that he may have a chance to fit the Socket. I have known these sometimes last for years, especially, when well supported by the neighbouring Teeth.³²

Rowlandson's dentist's sign shows his preference for live teeth, following Hunter's, views. The latter felt that dead teeth "do not always retain their colour, but are susceptible of stain".³³

The possible loop in the mouth of the younger female recipient may indicate that Rowlandson's second dentist is securing the transplanted tooth which was fixed:

...in general to the two neighbouring Teeth, by means of silk or sea weed. If it is an incisor or cuspidatus, the silk should first be tied to the neck of one of the

²⁷ Bell, op cit., p. 320.

²⁸ *Ibid.*, p. 324.

²⁹ Knox, op cit., fn. 12, p. 122.

³⁰ Hunter, op cit., fn. 6, p. 101.

³¹ *Ibid.*, p. 101.

³² *Ibid.*, pp. 96-7.

³³ *Ibid.*, p. 105.

neighbouring Teeth, as near the gum as possible, then the two ends of the silk should be brought round upon the body of the Scion Tooth, but not so near the gum as in the former, and tied there; then it should be brought round the neck of the other neighbouring Tooth, as near the gum as possible, as in the first, and tied there...³⁴

For premolars Hunter recommended bringing the thread over the grinding surface. Robert Wooffendale also suggested using unbleached thread or silkworm gut.³⁵ He did not like using gold wire however he admitted he did "sometimes use at the request of the patient".³⁶ Perhaps the second dentist is using the instrument to loop some wire round the teeth. If the thread slipped Bell said it should be retied but he was confident that "this, however, will never happen in the hands of an expert artist who has been sufficiently accustomed to this branch of practice".³⁷ He also recommended ensuring that the new tooth was level with its neighbours: "care should be taken to make the surface of the transplanted tooth somewhat lower than the level of the contiguous teeth, so that no inconvenience may occur from those in the opposite jaw pressing against it."³⁸

According to Rowlandson's image men as well as women were queuing up for transplanted teeth. The not so young dandy looking at himself in a mirror may have received the following advice for the care of his new tooth:

...be particularly attentive at first, and give it as little motion as possible. In many cases a soreness will continue for some days, and the gums will swell... take great care not to catch cold, or expose...[yourself] to any of the other common causes of fever; for such actions are very likely to prevent the success of this operation. This caution is more necessary in the winter, than the summer...³⁹

Benjamin Bell agreed that cold and damp weather were likely to inhibit success and recommended a diet of soft food as well.⁴⁰ Rowlandson's dandy may have returned to have the threads removed after the tooth was firm; according to Hunter this could be after a fortnight or it could be some months after the transplantation.⁴¹

What were the likely outcomes of a tooth transplantation for those involved? The donors walked away in much pain as Rowlandson's donors all show. The poor girl looks at her hand to see how much money she has earned: probably only a shilling.⁴² The dentist charged, on average, two to five guineas per tooth.⁴³ Thus

³⁴ Ibid, p. 106.

³⁵ Robert Wooffendale, *Practical Observations on the Human Teeth*, London: J. Johnson, 1783, p. 144.

³⁶ Ibid., p. 145.

³⁷ Bell, op cit., fn. 22, p. 321.

³⁸ Ibid., pp. 318-9.

³⁹ Hunter, op cit., fn. 6, pp. 108-9.

⁴⁰ Bell, op cit., fn. 22, pp. 322-3.

⁴¹ Hunter, op cit., fn. 6, pp. 108-9.

⁴² Knox, op cit., fn. 12, p. 122. Equivalent to about £62 in wages today.

transplanting was a lucrative operation for these early dentists. The recipients were undoubtedly hoping to improve their looks. Benjamin Bell was clear that the primary purpose of the operation was: "to obviate deformity, than to be productive of any real advantage."⁴⁴

The recipients were no doubt hoping the tooth would have a long life. Hunter did admit that: "It sometimes happens that the two parts do not unite"⁴⁵ but lack of success was due to specific circumstances rather than because the theory did not work as: "The success of this operation is founded on a disposition in all living substances to unite when brought into contact with one another."⁴⁶ In his mind Hunter had proved the theory with his experiment, transplanting a human tooth into a cock's comb, even though he admitted it worked only once! Having injected the comb with a solution, he killed the cock and then cut through the comb. He observed that: "...the vessels of the Tooth well injected, and also observed that the external surface of the Tooth adheres everywhere to the comb by vessels, similar to the union of a Tooth with the Gum and Sockets."⁴⁷

Not all dentists agreed with Hunter on the efficacy of this operation. William Rae, dentist to George III from 1785, thought it was ineffective as it did "...not succeed once in five times, and though they fix for a little time, they generally act as extraneous bodies."⁴⁸ His brother John disagreed, advertising in the *Edinburgh Advertiser* of 12 January 1784 that "he continues to transplant teeth".⁴⁹ Thomas Berdmore, 'dentist in ordinary to his majesty' George III, agreed with Rae: "what shall we say of those who pretend to supply one mouth with the Teeth of another; with Teeth which cannot fit properly once in a hundred trials."⁵⁰

Berdmore suggested that any successes in the tooth remaining fast were scams:

In many instances, where this transplanting of Teeth has been thought to have succeeded well, I am strongly of opinion, that a new crown has been grafted to the old root, or the extracted Tooth has been replaced...and the patient has been made to believe that a new Tooth, extracted from another person for the purpose, is placed and made to adhere in this manner. Instances of both sorts of deception have more than once fallen under my own observation...⁵¹

⁴³ Five guineas equates to about £500 using the retail price index or £6500 using average earnings – a housemaid's wages for the year. P E Jullion charged five guineas in 1781, Menzies Campbell op cit., fn. 7, p. 370.

⁴⁴ Bell, op cit., fn. 22, p. 314.

⁴⁵ Hunter, op cit., fn. 6, p. 109.

⁴⁶ Hunter, op cit., fn. 23, pp. 126-7.

⁴⁷ Hunter, op cit., fn. 6, p. 112.

⁴⁸ William Rae quoted in Henry W. Noble, Tooth transplantation: a controversial history, *History of Dentistry Research Group newsletter*, October 2002; 11. Available at <http://www.rcpsg.ac.uk/hdrg/2002oct4.htm>

⁴⁹ John Rae, *ibid*.

⁵⁰ Thomas Berdmore, *A Treatise on the Disorders and Deformities of the Teeth and Gums*, London, 1768, p. 101.

⁵¹ *Ibid*., pp. 102-3.

Rae also objected to the operation on moral grounds and Berdmore because it was "immoderately expensive".⁵² Rae thought the practice dangerous as teeth were by necessity taken from poor people, who were very often diseased, "generally with the *lues venerea*".⁵³ Hunter had few worries about disease spreading despite thinking that the tooth and gums united (although he did still recommend choosing healthy donors): "not that I believe it possible to transplant an infection of any kind from the circulating juices; although we know from experience that it may be done by a matter secreted from them".⁵⁴ The worst that could happen according to Hunter was inflammation, a gum boil, the tooth dropping out or the roots dissolving in the way that deciduous teeth do. He did discuss six cases in which venereal disease had been attributed to tooth transplantations but he refuted this and described how the cases did not exactly match the *lues venerea*.⁵⁵

Wooffendale, although a supporter of the practice, seemed to hedge his bets advising: "When this operation is performed, a physician should attend the patient to regulate the fever which, with some people, is considerable; with others trifling."⁵⁶ Bell reassured that although communication of disease was a theoretical possibility: "It has not however been found on experience to be sufficient to counter balance the advantages which are supposed to be delivered from this operation; for it is daily practised, and we seldom hear ever of any suspicion of infection being carried into the system by it."⁵⁷ Several authors begged to differ with Bell. We have a first-hand account of the results from Vicesimus Knox:

A tumour and inflammation ensued. The pain I suffered is not to be described...The disease still continued, and I lost several of my teeth and a great part of my gums and palate. My lips were distorted, or corroded, in a frightful manner.⁵⁸

Sir William Watson, vice president of the Royal Society, published an account of a transplantation in the *Medical Transactions* of the College of Physicians (1785) which he believed had led to the transmission of venereal disease and from that a fatality: "Things passed well but after a month her mouth became painful...The cheeks and throat, were corroded by large, deep and foetid ulcers...Her strength gradually lessened, until death put an end to her sufferings..."⁵⁹

⁵² Ibid., p. 101.

⁵³ Noble, op cit., fn. 48.

⁵⁴ Hunter, op cit., fn. 6, p. 100.

⁵⁵ John Hunter, *A Treatise on the Venereal Disease*, London, 1786, pp. 391-4. Available at http://books.google.co.uk/books?id=yUwOAAAQAAJ&printsec=frontcover&source=gbs_ge_summary_r&cad=0#v=onepage&q&f=false

⁵⁶ Wooffendale, op cit., fn. 35, pp. 135-6.

⁵⁷ Bell op cit., fn. 22, p. 323.

⁵⁸ Knox, op cit., fn. 12, p. 122.

⁵⁹ William Watson, An account of a disease occasioned by transplanting a tooth, *Medical Transactions of the College of Physicians* 1783: 3: 325-338.

Even practitioners of transplanting questioned the morality of certain aspects. Wooffendale, perhaps keen to promote his own practice, poured suspicion on his fellow dentists suggesting that they deliberately neglected the teeth of their younger patients, like the young woman on the right in Rowlandson's cartoon, in order to promote transplantation: "I am rather of the opinion such omission has been in expectation, that, when the tooth were farther decayed, the patient must have others transplanted in their places."⁶⁰ Alternatively Wooffendale says dentists may have been driven towards lucrative transplantation through the lack of reasonable payment for other services!

Rowlandson's print came at the end of the 18th century. New types of artificial teeth were being developed, such as Nicholas Dubois de Chemant's all porcelain dentures. Success in this area, notably with the development in the mid-19th century of dentures with vulcanite bases and porcelain teeth, alongside transplantation's failure rate and concerns over its safety led to its demise. Despite this perhaps transplanting continued to appeal as it appears surprisingly late in text books. Transplanting is mentioned in Colyer and Sprawson's 9th edition of *Dental Surgery and Pathology* (1953) although it copies word for word the 1910 3rd edition. They do state that transplantation is not performed to any extent in Britain and objected to on the grounds of (in this order) risk of failure, risk of inoculation and moral issues. Nevertheless a description of the procedure is included.

Today live tooth transplantation seems a possibility again with developments in stem cell research – however the patients will of course be receiving their 'own' teeth and we need not fear a repeat of Rowlandson's *Transplanting of teeth*.

Acknowledgement

With thanks to Malcolm Bishop for drawing my attention to the reference to transplanting in Osbert Sitwell's autobiography.

⁶⁰ Wooffendale, op cit., p. 136.

HISTORY OF THE BELFAST DENTAL SCHOOL (1919-1965) [The 2002 Lilian Lindsay Memorial Lecture]

John Desmond Eccles *

Editor's Note

Professor Ian Benington notes that when the British Dental Association Conference was held in Belfast in 2002 the Lilian Lindsay Memorial Lecture on the History of Queen's University Dental School was given by Professor Desmond Eccles. Benington recently came across some of Eccles' papers and he rightly reminded him this one should be published before it is lost.

The early history

Mr John James Andrew [LDS 1882], a Scottish dentist who moved to Belfast and opened a practice there, has been called the 'Father of the Belfast Dental School'. He was probably the first person on to see the need for such an institution and was active in its inception. Being an accomplished microscopist brought him into contact with the university where he made friends who helped him to further this project. When the School opened he was 63 years of age - too old to apply for a clinical post. He was President of the British Dental Association in 1908 and hosted its Annual Conference in Belfast.

The first step towards establishing the School was taken in 1919 when the Queen's University of Belfast set up a committee to consider how best to provide teaching in dentistry and to generate a report on the subject of dental treatment. It reported that a dental department was an essential feature of a Dental School and that the Royal Victoria Hospital (RVH) was willing to provide the necessary facilities. The Senate of Queen's then recommended the establishment of a School of Dentistry empowered to confer the degrees of BDS and MDS and the diploma of LDS.

Four part-time lecturer posts were created and filled by local practitioners: Herbert Elwood [LDS Edin 1911] (prosthetics), Hugh Theodore Alexander McKeag [BDS Dubl 1918] (orthodontics), William Muirhead Hunter [LDS Edin 1910] (dental metallurgy) and William Marshall Swan [LDS 1907] (dental surgery). The salary was £50 per annum. Thomas Walmsley, professor of anatomy, was appointed to lecture on anatomy to dental students. The new staff commenced on 1 October 1920, the date on which the Dental School officially began. Messrs Elwood and Swan remained in post until 1949 and McKeag until 1959 (Fig 1).

The Royal Victoria designated space on the ground floor of the King Edward Building (KEB) (Fig 2) for dental treatment and appointed Swan and Dr John Henry O'Neill [LDS Irel 1912, LM RCP Irel 1911, LM RCS Irel 1911] to attend on two sessions a week. While this accommodation was adequate for the two students of

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Professor emeritus and former Dean.

the first intake, when three more arrived further space was needed. The hospital was reluctant to provide for this from its scarce funds. However its treasurer came up with a brilliant plan. He suggested having a day when students from all faculties would 'dress up' and collect money for the hospital. So 1921 saw the first of many 'Student Days'.

Figure 1 Early staff of the Dental School; from left, Herbert Elwood, Professor PJ Stoy (appointed some years later), Marshall Swan and Muirhead Hunter.



The first Students' Day raised £995.16s.8p. The hospital contributed £7.12s.4p to make up the total cost of purchasing and equipping two ex-army huts, which were sited end-to-end adjacent to the KEB. The resulting area of 60ft by 20ft accommodated a conservation room, a waiting room and a laboratory. Foot engines provided the power for tooth preparation. Extractions continued to be performed in the

KEB. Four further members were added to the Honorary Staff: Messrs Elwood and Hunter, already on the University staff, John Malone [LDS Edin] and Spence Andrews. A technician, Mr Donaldson, was appointed to teach dental mechanics. All these early members of staff had trained at dental schools in England or Scotland. Without their valuable assistance the Dental School could not have been founded.

Figure 2 The King Edward Building of the Royal Victoria Hospital. The Dental Department occupied the top floor until 1965 when the new Dental School opened.



New accommodation

The pressure on these early facilities and planning for the long term needs of the School indicated the need for a much larger clinical area. In 1923 the Board of Management asked Swan and O'Neill to draw up a report on the requirements for an up-to-date dental department. They visited the Incorporated Dental Hospital of Ireland in Dublin, where three academic bodies, Dublin University (Trinity), the National University of Ireland and the College of Surgeons, shared its clinical facilities; 30 students were then in training. Following that visit they recommended a dental department should include a waiting room, an extraction room, a general

anaesthetic room, a conservation room and a mechanics laboratory. A number of honorary dentists, two honorary anaesthetists and nursing staff would constitute the clinical staff. A technician assisted by an apprentice would be necessary to teach students and to make dentures for patients. House surgeons and demonstrators would be appointed later.

The Board of Management considered the report and recommended a large expansion of dental facilities using the top (second) floor of the KEB, formerly used as sleeping quarters for nurses. Alterations would be made to provide the rooms mentioned in the report. The conservation room would have space for 17 chairs. The estimated cost of the alterations and equipment was £4,000.

Application was made to the Dental Board of the United Kingdom, forerunner of the General Dental Council, for financial assistance. It pointing out the present limited space was restricting the acceptance of students anxious to study dentistry. In 1924 the Board finally agreed to support the project and the alterations to the KEB were completed at a cost of £5,500; the furnishing and equipping cost a further £1,608. One press report ran:

The new department is excellently supported in a series of spacious rooms and halls on the upper flat at the King Edward Building, every possible regard being paid to lighting heating and ventilation. There is a commodious reception or waiting room, comfortably furnished. Experts who have been over the new dental clinic declare it to be the finest and most perfectly equipped in the three kingdoms.

This report would astound many of those who subsequently worked in the Department. The 1924 report on the work of the Department states: the Extraction Room treated 6,500 patients, 333 of these being in-patients, General Anaesthetics 234, Conservation Room 1,787 and 170 dentures were inserted. Charges for treatment were raised to 6d for an extraction with or without local anaesthesia, 3s 6d for extractions under general anaesthesia, fillings 1s and gold inlays 4s. There were special charges for orthodontic treatment.

The Dental Department

The Department was approached by a door at the side of the building. Two flights of steps led directly to the Waiting Room. Staff, students and in-patients could enter the Department by a lift. This lift would respond to a call only if the gate was closed. If left open at another floor you had to shake the latticework gate and shout, in the hope that someone below would close it.

The Waiting Room contained a series of wooden benches facing a receptionist in a small cubicle (patients' notes were smaller then). Next to this was a moveable screen behind which a dentist saw each new patient, both seated in ordinary chairs. From the Waiting Room a door led to a corridor which ran around the four sides of a central well. The east and west sides were cantilevered out into the well to provide a passage without narrowing the clinical areas.

The south wing comprised the Waiting Room, the Students' Room and the Staff Room adjacent to the lift. The Students' Room was cramped and included lockers, two sturdy tables which supported manikins during the Phantom Head course, and a few chairs. There were no phantom heads, just two frames with extracted teeth mounted in plaster.

The west wing contained the Filling Room, as it was originally labelled, the General Anaesthetic Room with a small recovery cubicle and a waiting area.

The north wing contained the Extraction Room with four chairs, one of which was screened off, an x-ray Room with dark room attached and a small staff lavatory.

In the east wing were the Diagnostic Clinic with one chair, the Dental Laboratory, the Prosthetic Room with four chairs, a notable feature of which was a wall-mounted board with impression trays hanging from hooks. Next was the Orthodontic Clinic with four chairs, one behind a screen for staff use. Finally there was a single small lavatory for patients. There were no special facilities for periodontal treatment.

Further staff

By 1924 the dental staff felt a need for a dentist to treat irregularities in the teeth of children. McKeag was appointed lecturer in orthodontics and a member of the hospital staff. In 1925 Hunter felt unable to cope with an additional 15 lectures in Dental Materia Medica and Metallurgy and Mr V L G Feldon became Lecturer in his place. In 1927 James Lyons [LDS 1912] and David Stephenson Rankin [LDS 1903] joined the honorary staff. Finally Mr J A Clarke, a dental mechanic who had practised dentistry under the 1921 Dentists Act, was appointed to supervise the laboratory and teach students. He was later awarded an MDS degree and given consultant status.

By this time the School had begun to produce qualified dentists in a position to provide a service to the community: four in 1924, six in 1925 and 12 in 1926.

Dental mechanics

In 1925 The Academic Council of Queen's recommended that dental students should complete 500 hours of dental mechanics before entry to the first year! This requirement, presumably taken on the advice of staff, signalled a long period of undue emphasis on the subject. In 1929 a laboratory was set up in a hut at Queen's formerly used by the Ulster Volunteer Force. The course, instructed by Mr K B Rae, included technical training in making dentures (in vulcanite), gold partial dentures (in sheet brass) and gold shell crowns (also in sheet brass). This made the dental course more expensive and much busier than the early stages of the medical course. Further out-of-date exercises, cohesive and non-cohesive gold fillings (tin representing gold), were included on the Phantom Head course although they were never be used on patients.

One detail of the course may prove interesting. Students had to make a metal (brass representing gold) partial denture. First, a plaster model of the mouth was pressed into damp sand contained in a metal frame, and molten zinc poured into the resulting space to form a die. A second part of the frame was fitted on top of the first and molten lead poured in to form a counter die. A pattern of the proposed denture was cut in sheet brass, trimmed to fit the die and annealed. With the brass pattern in position on the die, the counter die was seated and the whole assembly was placed on a firm surface and hit with a sledge-hammer. This was repeated, with frequent annealing and adjusting, until the plate fitted well. Clasps were cut from brass plate, shaped and soldered into position. Brass wire pins were soldered on to the plate in vertical positions, one for each tooth. Finally, porcelain tube teeth (with

an axial hole) were shaped to fit the denture and cemented on to the pins. Needless to say, no student ever made a gold denture.

Further appointments

Again with the assistance of the Dental Board, a post of part-time lecturer in clinical dental surgery was established, involving five sessions a week teaching at the chairside in the Conservation Room. Maurice Gerard Riordan [LDS U Belf 1925], a graduate of the School, was appointed and served for 20 years until his death in 1946. He was succeeded by Robert Stewart Lyons Sloan [LDS U Belfast 1931, DDS Chicago], who had to retire in 1949 due to ill-health. He was followed on a temporary basis by Cecil Edgar Chapman [LDS U Belf 1938]. In 1946 Dr James Scott was appointed Lecturer in Anatomy for Dental Students.

Appointment of a professor and the first full-time senior staff

Prior to 1947 the School did not have a single full-time clinical member of staff but it became clear this was quite unacceptable in a reputable dental school. So, in 1947, Philip Stoy [BDS Birm 1932, LDS 1931, FDS 1947] (Fig 3) was appointed professor and dental assistant dean (Fig 3). He was a kind, intelligent man, a Quaker and a sense of fun. Stoy brought about the changes the School so badly needed. He at once set about creating other full-time posts and reviewing the curriculum. His first step was to appoint a secretary, Doris Millen (later McCrea), always known as Doris and much loved by staff and students over many years. She was an ideal appointee and ably assisted Stoy. The students organised a welcome for Stoy and Doris, who were taken on a tour of the university area on a flatbed truck and made to visit a local pub for a mandatory glass of Guinness!

Figure 3 Professor Philip J Stoy, Professor and Dental Assistant Dean



New lecturers appointed in 1953 were Ralph Jennings Smith [LDS 1936, BDS Birm 1946] in Conservative Dentistry, Philip Saunbury [LDS U Manch 1939] in Prosthetics and John Keith Hamilton Benson [BD U Manch 1940, FDS 1949] in Dental Surgery. The first two served for many years but Benson died in the same year. These new staff members, together with Professor Stoy, initiated a great improvement in teaching.

The new curriculum

A workable number of staff having been appointed, a small committee comprising Stoy, Sloan and Scott, planned a new curriculum which was introduced in 1950. It involved dropping the LDS diploma and introducing a five-year course leading to a BDS. The entrance requirements would be the same as for medicine. Previously, a pass in Junior Certificate Latin had been required for entry to the BDS course but this requirement was dropped. The second year was tailored for dental students, to include dental anatomy and dental materials. A

student who failed the theoretical but passed the practical aspects of the BDS exam could apply for an LDS diploma. The object of this was to avoid limiting recruitment into the profession at a time when dentists were badly needed. In 1953 the BDS regulations were modified; in future it could be awarded by thesis or examination. One benefit of the new regulations was a large reduction in hours spent on dental mechanics.

Post-war developments

Accommodation and facilities in the KEB were deemed to be quite unsatisfactory. A number of schemes were put forward over the years by the staff but none had been implemented, one reason being the outbreak of war in 1939.

1950 saw the end of the period of wartime and post-war austerity. People could begin to look ahead and money became available. This resulted: a new mechanics laboratory at Queen's, a phantom head laboratory at the KEB and the first stage of the much needed re-equipping of the clinical areas.

A large hut at the rear of the main university campus at Queen's was adapted for teaching dental mechanics and became operational in 1952. Mr D C Scott was appointed as instructor and the course was modernised.

Using the Students' Room for the Phantom Head course had always been unsatisfactory, so a new hut was built just outside the entrance to the KEB and equipped with benches and proper phantom heads, although not with electric motors. It came into use in 1952.

The original dental chairs installed in 1924 had a metal base, enamelled black, and trimmed with gold lines. The seats, backs and armrests were wooden and the headrests were shaped like rolls. They were finally replaced in 1952 by modern chairs. Electric motors were fitted to all 17 workplaces in the Conservation Clinic where previously eight chairs had relied on foot engines (Fig 4).

Figure 4 The Conservation Clinic after the first re-equipping. Note the skylights which provided a northern light, recommended at a time when artificial lighting was poor



After this first re-equipping there was still scope for improvement (Fig 5). In a second phase of re-equipping, units with air-turbines were installed and specially designed partitions, with work surfaces and cupboards, were added. They gave more privacy and allowed more efficient working (Fig 6).

Figure 5 A workplace after the first re-equipping. Students had to provide their own cabinet of instruments and a foot engine.



Figure 6: The Conservation Clinic after the second re-equipping. Partitions separated the workplaces and provided storage space and work surfaces. They also gave patients more privacy.



In 1961, the General Dental Council made a visitation and inspected the premises used for teaching. A critical and adverse report on conditions in the KEB emphasised the need to press forward with building operations for the new School, which was to be sited at the RVH complex near the Grosvenor Road. Queen's asked them to

delay any action on the report until they had an opportunity of visiting the new

School, and to this they agreed. The new Dental School opened in 1965 and staff were at last able to say farewell to the KEB.



Figure 7 Professor James Scott

Senior Clinical and Preclinical Staff: 1945-1964

Anatomy for Dental Students: Dr James Scott
 Child and Preventive Dentistry: Cuthbert McNeill, Robert Elliott
 Conservative Dentistry: Dr Robert Sloan, Ralph J Smith, Cecil Chapman
 General Anaesthesia: Dr J O'Neill, Dr Maurice Brown, Dr Charles Reid, Dr Harold Love
 Microbiology for Dental Students: Dr Eileen Barclay
 Medicine for Dental Students: Dr RWM Strain
 Oral and Dental Surgery: Arthur Prophet, Stanley Alldritt
 Oral Medicine: Professor PJ Stoy
 Orthodontics: Dr HTA McKeag, Philip Adams, Andrew Richardson, Barry Brown
 Pathology for Dental Students: Dr Florence McKeown, Dr Harold Jones
 Periodontology: Dr Cleaver Chapman,
 Physiology for Dental Students: Dr Robert Whelan
 Prosthetic Dentistry: Philip Saunbury, Jack Clarke
 Surgery for Dental Students: Mr John Megaw, Dr Ronald Loane

Research

Dr (later Professor) James Scott was based in the Anatomy Department at Queen's where he ran an intercalated BSc course and guided some members of staff to PhDs.

Research projects directed by Scott include the following:

Studies in the blood supply of the teeth and jaws of rats - David Adams
 Development of the teeth and jaws in undernourished pigs - Barry Brown
 Development of the periodontal ligament in rats and its relation to tooth eruption - J D Eccles
 Studies of the temporo-mandibular joint - Ian Findlay

In 1960, Philip Adams commenced a longitudinal Growth Study of 300 Belfast schoolchildren whom he followed up annually from age 5 with models and radiographs. The study yielded a wealth of data.

A famous publication was J H Scott (with N B B Symons) *Introduction to dental anatomy* (1964).

Acknowledgements

In the preparation of this article I have been greatly helped by the text of a lecture delivered by Professor Stoy on the occasion of the Golden Jubilee of the Belfast Dental School.

The School owes much to those early general practitioners who were willing to take time from their practices and venture into waters which were totally outside their experience: they started the School and staffed it until 1953 when the first full-time staff members were appointed.

Although I have painted a somewhat depressing picture of the School this should be seen in context and compared with other schools of the same vintage; the Belfast School merely lagged behind some of the others.

[Ed's Note: Professor Benington gave much help during preparation of this paper for publication].

THE NEW CROSS SCHOOL FOR DENTAL AUXILIARIES (THERAPISTS From 1979) (1960-1983)

Julie Gallagher,* Polly Munday[†] and Stanley Gelbier[#]

Introduction

The use of parodontal workers in dentistry stretches back over many years. Perhaps the first people to be so involved were surgery handmaidens, initially cleaning and generally looking after the surgery. They evolved into dental chairside assistants, later re-named dental surgery assistants; and then dental nurses.¹

Dental dressers

The dental profession now accepts the value of ancillary staff but that has not always been true. In 1921 dental dressers were trained and employed to "clean, fill and extract teeth for school children." It would appear there was a requirement for them to be "young women of good character".² To some extent dressers were based on the existing American dental hygienists, but with the addition of "filling in those cavities without pulpal involvement". Its 1920s anxiety about the employment in school clinics of 'dental dressers' was articulated by the British Dental Association. They assisted dentists by doing "minor dental work" under their "close supervision". The Dental Board of the United Kingdom³ expressed anxiety about "the insidious dangers" associated with the employment of dressers. It said if dentistry was to become a respected profession it must be

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¹ S Gelbier, The lady at the chairside: dental surgery assistants in the United Kingdom, *Journal of the History of Dentistry* 1997; 45: 121-123.

² S Gelbier, Dental dressers: 1920-1942, *Dental Historian* 2006; 42: 27-46.

³ Forerunner of the GDC.

regulated and seen to be subject to a strict discipline. However, a severe shortage of dentists caused a number of local education authorities (LEAs) to disagree with the profession. For example, Sheffield's clinics looked after 74,000 children. The LEA claimed its three dental dressers were essential for their treatment. It pointed out that in Poor Law schools oral hygiene instruction by nurses produced big improvements in dental health. 'Dental wagons' or mobile dental surgeries with nurses functioning as dressers travelled around rural areas. In 1921 the Chief Medical Officer (CMO) to the Board of Education said the dental condition of children and young people in England and Wales was "serious and difficult".⁴ In areas with no dental service 60-70 per cent of children had extensively decayed teeth, rising to 82% in Liverpool. With "vigorous action" it fell to 40% in London and 33% in Cambridge. In London the proportion of children with sound teeth rose from 51% in 1913 to 62% in 1921. Many more left school with healthy teeth as the number of school clinics increased. Pointing to a shortage of dentists the CMO said dressers would be needed for some time. However, by 1942 few, if any, dressers provided minor work. Their role had been assigned to history.

UK mission to the New Zealand school dental nurses scheme

In 1917 there were interesting developments in New Zealand where there was terrible dental disease in children. It was proposed that a school service be established, with dental nurses attached to schools.

Colonel T A Hunter CBE was appointed as Chief Dental Officer to the Education Department. He had been Director of the Dental Service in the NZ Military Forces during the 1914-18 war.⁵ Hunter realised most dentists were fully occupied in treating adults so could not cope with the colossal problem of children's teeth. His thoughts turned to an earlier suggestion by Norman K Cox⁶ about the use of specially trained *female nurses*. Cox was President of the NZ Dental Association in 1913. He called for "compulsory dental prophylaxis for school children" and advocated a system of State dentistry for all children between the ages of 6 and 14 years delivered through school clinics. However, Cox shocked his audience by proposing that Otago Dental School introduce a "fairly short course" for people called, he suggested, "dental hygienists", whose sole function would be to care for children. Cox received support for a system of State dentistry. However, there was strong condemnation of the shortened

⁴ *The Health of the school child: Annual report of the Chief Medical Officer of the Board of Education for the year 1921*, London: His Majesty's Stationery Office, 1922, Ch 5 'Dental inspection and treatment', p. 62.

⁵ J Llewellyn Saunders, *The New Zealand School Dental Service: Its initiation and development 1920-1960*, Wellington: PE Owen Government Printer, undated, p 6.

⁶ *Ibid*, p 4.

course which was seen as "a menace to the public and the profession, and an injustice to prospective dental students".⁷

The school service was established in 1920 with Hunter as its CDO. The dental nurses were the first point of contact with patients, without the intervention of a dentist. Referral to dentists came when a nurse felt advice or additional treatment was needed. Nurses worked in or near their home areas if there was a shortage of dental manpower.

In the 1950s there was severe dental disease in British children but not enough dentists to treat it, especially in school dental services. Many of dentists had left to work in the more lucrative general dental service of the NHS. Something had to be done. The Department of Health sent a UK mission to examine the New Zealand scheme to consider if it could be replicated in the UK.

Following passage of the 1956 Dentists Act a General Dental Council was established. During parliamentary debates it was agreed that one of the first acts of the GDC would be to establish an experimental dental scheme.

The 1957 Dentists Act included provision for an experiment to be carried on the training and employment of ancillary dental workers permitted to fill teeth and extract deciduous teeth in national and local authority health services. The object was to assess their value to the community. The experiment was to be carried out provided the Privy Council, after consulting the GDC, so required it. The Privy Council consulted it on 18 December 1956; and in April 1957 the Dental Council replied. A memorandum outlined its ideas on the form for an experiment, the requirement for which came on 19 July. Members of the Experimental Scheme Committee were appointed by the GDC on 12 November, with four additional people appointed by the Privy Council on 6 January 1958. The committee first met on 29 January and soon agreed plans for a dental auxiliary school.

A School for Dental Auxiliaries

The School for Dental Auxiliaries (Therapists from 1979) was opened in 1960, in the grounds of New Cross Hospital in Lewisham, south east London. The latter was opened in 1877 by the Metropolitan Asylum Board as a smallpox isolation hospital. It later developed as a general hospital treating patients with infectious diseases. An isolation block was left incomplete in 1939. When the National Health Service started in 1948 the hospital came under the control of the Bermondsey and Southwark hospital management committee. By 1974 the hospital was managed by the Lewisham district management committee of the Lambeth, Southwark and Lewisham Area Health Authority (Teaching).

However the School had its own Committee of Management to which the Director was accountable. Some committee members were appointed by the General Dental Council, others by the Secretary of State for Health.⁸

⁷ *Ibid*, p 2.

By February 1959 the Ministry notified the GDC that proposals and estimates for its use of the hospital for the experimental scheme had been approved in principle. The isolation block was rented to the GDC at a peppercorn rent. Construction started on 29 October and the building was ready for occupation in October 1960. The School for Dental Auxiliaries was officially opened by the Right Hon Enoch Powell MBE MP, Minister of Health (Fig 1), on 9 December.

Figure 1 Enoch Powell MP on the left and Jack Bingay, the Director



The ground floor had been converted into 31 clinical surgeries separated by glass partitions so that the children could see their friends being treated next door. The original surgeries were equipped with a Sterling 'Minor' unit with a single cylinder pump chair with built in child's seat, operating stool, anglepoise lamp, small electric water steriliser, sink and waste basin. Two surgeries were used for local anaesthetics, one for general anaesthesia. There was a visual call system so students could notify the dental surgeon

in charge when help or attention was needed. Only the demonstration surgery had a Borden airtorator and x-ray viewer.

A fully equipped x-ray room and a separate darkroom for film processing were manned by two students at a time.

Upstairs were offices, lecture theatres and a pre-clinical laboratory, with phantom heads and benches for 60 individual workplaces. Each was equipped with a Sterling laboratory engine with cord, a variable speed control, anglepoise lamp and a removable phantom head.

There were separate changing rooms with individual lockers for first and second year students and female-only lavatories.

⁸ Stanley Gelbier was an appointed member of this Committee from 1974 until the School closed, representing the Secretary of State for Health, Barbara Castle.

The staff

The first Director of the School was Jack Bingay MBE LDS, formerly chief dental officer of the County of Middlesex where he was thought by many people to run the leading school dental service in its day. After he retired in 1968 he was replaced by Thomas (Tommy) Liptrott LDS. The third Director was Edward (Ted) Seal BDS MSc LDS DDPH (1976-1983).

Figure 2 Enoch Powell talking to a student after declaring the School open.



Bingay's deputy was Thomas (Tom) Le Huray LDS. Several full or part-time dental surgeons were appointed as lecturers,⁹ with others seconded by the local community dental service to treat patients unsuitable for them. There were also five tutors. In the early days they came from the NZ Dental Nurse scheme, headed by Mrs Douglas. The New Zealanders were gradually replaced by New Cross-trained staff, the first of whom was Sandra Gledhill.

Tom Graham was the dental technician in charge of the laboratory, who could turn his hand to virtually anything. He remained during the

whole time the School was open.

The Warden responsible for the pastoral care (and control!) of the girls was Miss Victoria Martin, a former Wren. After leaving New Cross she became head of the Queen's household at Buckingham Palace. The students' personal appearance was of great importance, so the hemlines of skirts were regularly checked, as were the length of hair which was tied back tightly and the length of fingernails.

Schoolchildren were bussed in from London County Council schools for care and local children of pre-school-age were also treated. Students acted as coach escorts.

The students

Entrants had to be at least 17-years-old, with normally five passes in the General Certificate of Education (Ordinary Level) including English language,

⁹ David Soloman (Denis) Berman, seconded to the staff from the London Hospital Dental School, was later appointed by the University of London as Professor of Children's Dentistry at the London.

mathematics and a science subject; or evidence of an equivalent standard. Selection was partly geographic, hoping they would return to the areas where they lived, especially if there was a dental manpower problem in that part of the country.

Girls who came from outside London were accommodated in a hostel: Beltwood, a large Victorian house on Sydenham Hill, Lewisham. It was previously used as a nursing home where unmarried girls gave birth and then had their babies adopted. The hostel was run by the Young Women's Christian Association on behalf of the School's Committee of Management.

The course

Sixty students were admitted to the first year of study. They received a maintenance allowance during training of £240 in year 1 and £250 in the second year. The intensive two-year training programme covered all the educational and basic skills needed to ensure they could make child patients dentally fit. They were to treat children in the school (later community) and hospital dental services under the supervision of a dentist. However they could not work in general dental practice.

The curriculum

Importantly, the nature of work by the UK auxiliaries differed from the New Zealand scheme. They were trained to carry out treatment under the direction of a dental surgeon. The two-year curriculum covered all the educational and basic skills needed to ensure they could make patients dentally fit. Included were the extraction of deciduous teeth under local infiltration anaesthesia, simple fillings, scaling, cleaning and polishing, the application of prophylactic solutions including fluoride gels, giving advice on dental hygiene to children and their parents and dental health education in school classroom.

The Times reported in 1962¹⁰ on a fresh approach to the problem of the poor condition of children's teeth, mentioning the passing out from New Cross of the first 50 young women, all aged between 17 and 25; and all single. Their duties would be totally confined to children, always working under the direction¹¹ of a dental surgeon. Although members of the first group were allowed to work where they wanted, in the majority of cases "it probably means near their home towns. In future the girls will be required to go wherever vacancies occur or what local authorities request".

¹⁰ Dental auxiliaries, *The Times*, 30 July 1962.

¹¹ The profession had fought for 'supervision' (ie with the dentist always present, eg in the next surgery. But parliament made it 'direction'.

The end of New Cross

By the late 1970s the number of dental graduates had increased and dental health of children had improve, perhaps due to introduction of fluoride in toothpastes. The overall need for manpower was examined by the government's Dental Strategy Review Group¹². An inquiry into dental education by the Nuffield Foundation¹³ praised the work of therapists but recommended closure of New Cross and the retraining of existing therapists as dental hygienists.

The decision to close New Cross came in October 1981. It finally closed in July 1983, once the final group of students had qualified.

During a parliamentary debate in January 1982 the Ministry of Health agreed that dental therapists would continue as a group, but would in future be trained alongside other dental professionals and allowed to work in all dental services.

It was initially stated that whilst it was expected many of the trainees would marry, indeed might marry during the training period, they could continue working after marriage.

By the time New Cross closed in 1983 many young ladies had qualified as auxiliaries and therapists and made their marks in treating children.

London Hospital Dental School

In its submission to the Nuffield Inquiry into Dental Education the London Hospital Dental School supported closure of New Cross. However, it went on to say that if therapists were still to exist in some form it would like to train them. The Department of Health later supported the London to establish a School for Therapists, training people [still only females] to gain a joint therapist-hygienist qualification.

Dental care professionals

A 1993 Nuffield report¹⁴ proposed the establishment of several new categories of what came to be known as 'professionals complementary to dentistry'. The GDC introduced statutory registers for a number of old and new PCDs. Included are hygienists, therapists, nurses and operating dental technicians and orthodontic therapists.

Later the title PCD was replaced by 'dental care professionals'. Meanwhile, several new training schools have opened. Not all of them - for example at Portsmouth University - train alongside dental students, one of the original reasons given for closing the New Cross School.

¹² *Report of the Dental Strategy Review Group*, London: HMSO, 1981.

¹³ Nuffield Report, *An Inquiry into Dental Education*, London: Nuffield Foundation, 1980.

¹⁴ Nuffield Report, *An enquiry into the education and training of persons auxiliary to dentistry*, London: The Nuffield Foundation, 1993.

Postscript

In spite of changes in attitudes there are still some members of the profession who have reservations about the use of what they see as 'competing' rather than 'supporting' clinicians. Hence the continued wide acceptance of hygienists rather than therapists. Perhaps this is tied up with monetary concerns.

The dentists seem to believe that the role of a therapist is to treat 'disadvantaged' or 'vulnerable' groups within society; ie those for whom it would be wrong to charge for treatment, including children and people with special needs.

The planners of services see DCPs as a 'cheaper' provider of services but how can that be right when the quality of service is exactly the same as provided by a dentist?

Figure 3 Dental auxiliary students 1961-3 (the second intake)



Jack Bingay, the first Director, is in the centre. To his left is Tom Le Huray, Deputy Director; and to his left is Mr Haynes, lecturer, who went on to be a dental pathologist. Further to the right is Tom Graham, the dental technician. In the same row are some of the original New Zealand tutors: the senior was Mrs Douglas, third from the left. Seventh from the right in the front row is Polly Munday.

On Bingay's right is Miss Victoria Martin, the Warden. Next to her is John Harris, lecturer.

SIR JOHN TOMES' GRAVE

Alan S Howe *

On 15 April 2010 a group of retired senior staff of community dental services in the South Thames NHS health region met at the Harrow Inn in Upper Caterham for lunch. They then proceeded to the cemetery in the churchyard of St Mary's Church. There, they saw the gravestone of John Tomes, who had died aged 80 years on 29 July 1895.¹

After their visit and report to the British Dental Association, the BDA undertook to maintain the gravestone which was a bit neglected. Unfortunately, from the road they were unable to see Upper Gorse, the house where he lived.

Figure 1 Four of the administrative dental officers standing behind the gravestone. From left to right they are Jerry Walsh, Robin Rippon, Les Cheeseman and John Herington.



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¹ Melanie Parker, Sir John Tomes (1815-1895), *Dental Historian* 2011 53: 59-69.

SECRETARIES OF THE BRITISH DENTAL ASSOCIATION
(Work in progress)

Stanley Gelbier

The BDA

In Victorian times the number of dental practitioners increased dramatically, not all of them trained and qualified. However there was no means of control to prevent malpractice and incompetence. By the 1870s leading dentists including John Tomes (the second dental knight) and Edwin Saunders (Queen Victoria's dentist; the second dental knight) formed the Dental Reform Committee which campaigned successfully for the first legislation to regulate dentistry. It resulted in passage of the first Dentists Act, in 1878.

A committee was set up in 1879 to establish an association to look after dentists and to ensure ethical care for patients. As a result the British Dental Association came into being in 1880 under the presidency of John Tomes. As with all organisations it required someone to look after the day-to-day administration. Thus it appointed an honorary (unpaid) secretary. By 1920 the association saw fit to appoint a paid official, a dental secretary. 1986 saw a change in title to reflect the vastly changed nature of the post, leading a large staff and helping to direct the focus for the association.

There are now 23,000 members.

The secretaries between 1879 and 2011 are shown in Figure 1.

Figure 1 The secretaries of the association

1879	James Smith Turner	Honorary Secretary
1883	Frederick Canton	
1887	Morton A Smale	
1890	William Bromfield Paterson	
1901	William Henry Dolamore	
1907	(Sir) Norman Bennett	
1911	(Sir) Frank Pearce	
1918	Harold Chapman	
1920	Robert Lindsay	Dental Secretary
1930	Charles Frederick Rilot	Acting Dental Secretary
1931	William G (Bill) Senior	Dental Secretary
1948	H Parker Buchanan	
1959	Jack N Peacock	Secretary
1971	Air Commodore Alastair Cavendish Lindsay Mackie CBE, DFC, MBIM	
1973	Ronald (Ronnie) Brockless Allen	

1986	(Professor) Norman Harold Whitehouse	Secretary/Chief Executive
1993	John Hunt	Chief Executive
2000	Ian Wylie	
2006	Peter Ward	

It is intended that further research will lead to biographies of the people concerned.

Acknowledgements

Thanks are due to Peter Ward, Chief Executive of the BDA, and Helen Nield, BDA Library Manager, for their support.

REPORTS FROM SOCIETIES AND UNIVERSITIES

Glasgow University Symposium on 'Apprenticeship to Lifelong Learning' – Dental Education Through the Centuries

Audrey M Noble, Hon. Secretary Henry Noble History of Dentistry Research Group

Forty six members and guests of the Henry Noble Group and Lindsay Society gathered on the evening Thursday 6 October in the Easterbrook Hall, Crichton Campus, Dumfries for a reception followed by a most enjoyable dinner.

A full day of lectures commenced at 9am on the Friday morning. The sun shone throughout the day so it was sad that rain arrived for our private visit, arranged by Professor McGowan to Portrack gardens on the Saturday afternoon. A very knowledgeable guide conducted us on a one and a half hour tour of the grounds and in spite of the inclement weather and somewhat slippery conditions underfoot, everyone declared it a fascinating venue and well worth the visit.

The Symposium entitled "Apprenticeship to Lifelong Learning" commenced on Friday morning with a welcome by Professor David Clark, Director of the Crichton Campus. He informed us about the campus which opened in 1999 and the courses and activities available at the Crichton.

Dr Stuart Robson, the chairman, introduced the first speaker of the day. Dr Malcolm Bishop, a retired general dental practitioner from Hertford, spoke on 'Novices, apprenticeships, the monasteries and the barber surgeons'. He led us through the centuries which preceded the formal stages in the creation of dentistry as a modern profession, through to 1771 when John Hunter came on the scene and into the early 1800s when dental schools and educating of the public was underway.

Professor Stanley Gelbier, head of the History of Dentistry Unit at King's College London Dental Institute, continued our journey through the 19th century with his talk entitled 'The Royal Colleges, the LDS and the struggles of the 19th century'. His lecture explored how formal steps were taken to train and set standards for the assessment of practitioners and how the teaching hospitals and colleges were established, providing the opportunity for dentistry to advance. Following the Dentists Act of 1878 the LDS became the standard qualification for the few who sought a dental qualification.

Dr Helen Marlborough, retired medical subjects librarian, University of Glasgow, moved us forward to 'The first University degree courses in dentistry'. Her paper examined the academic case for a dental degree and the circumstances which impeded the establishment of higher standards of dental education.

Professor David McGowan, Emeritus Professor of Oral Surgery and former Dean of Glasgow Dental School led us into the 20th century 'Pre and post-World War II – The 1930s to 1950s'. He informed us of the decline in student numbers in the 1930s, how during the war years there was little change, but post-war bursaries for ex-service men and university grants brought a new generation into

training. Continuing until in 1948 the coming of the NHS was welcomed by a generation keen to reap the rewards of the new dental service.

Professor Robin Basker, Emeritus Professor of Dental Prosthetics and former Dean of Leeds Dental School, completed the morning session with 'The early years of GDC involvement'. Moving to the second half of the 20th century, the lack of dentists and the huge amount of treatment required saw the design of an experimental scheme for the training of dental auxiliaries (later known as therapists). He described the formation of regulations for a statutory examination to offer a way on to the Dentists Register for dentists who were educated in other countries. Basker closed his address with an insight into European issues and the development and encouragement of postgraduate activity.

After a well earned lunch break, Professor Colin Smith, Emeritus Professor of Oral Pathology and former Dean of Sheffield Dental School, continued our journey 'From the 1970s on: the age of committees: new directions and opportunities, taken or not'. Now well into the 20th century he covered the setting up of new committees, the Nuffield Foundation looking into education, a University of London committee dealing with the closure and merging of dental schools and the Dental Strategy Review Group. This eventually led to the registration of Dental Care Professionals by the GDC in 2006.

Moving toward the end of the 20th century Professor Nairn Wilson, Dean of King's College London Dental Institute and former President of the General Dental Council told us about 'Regulating the education and training of dentists 1975-2000: an overview of exponential growth in a key function of the GDC'. Recommendations and guidance moved along in about 5-year jumps until 2000 when the GDC took on postgraduate education, including lifelong learning and speciality training as a new millennium ambition. Throughout this period leadership in the regulation of education was provided by nominated representatives of the dental authorities. Wilson concluded: "This function of the GDC from 1975-2000 has laid solid foundations for the future of dentistry".

Dr Roy McBurnie, retired Glasgow general dental practitioner, was born in Dumfries. He worked in general practice through the evolution of vocational training in Scotland from inception to its present-day form. He told us of the general practitioners perspective, of its strengths and weaknesses and of the changes which have taken place over the years. McBurnie concluded with a brief summary of the role of the Royal Colleges in developing postgraduate qualifications for practitioners.

Concluding our programme with the last decade on the 20th century and the first part of the 21st century, Dr Jim Rennie, retired Director of Dental Education NES (National Education for Scotland), spoke of 'Devolution and Dental Education'. This period saw significant difficulties with the provision of NHS dental services in Scotland, with a hostile public and bad press reports. The Scottish Government responded by bringing forward an ambitious programme of modernisation, capital developments and new investment in dental public health. Rennie declared: "Devolution and the Scottish Parliament have done a huge

amount and made significant differences in the way NHS dental services are provided north and south of Hadrian's wall."

Professor Sir David Mason, Emeritus Professor of Oral Medicine and former President of the General Dental Council, remarked on this fascinating day from barber surgeons through our remarkable heritage to our present day education facilities and achievements. He declared dentistry is now better prepared to meet future changes as a result of what we had learnt from our speakers. Sir David then led a short discussion, concluding that all felt assured dentistry will still be a stable long term occupation for the future. Professor Mason closed the discussion with the following remark: "We must all agree today's Symposium on 'Apprenticeship to Lifelong Learning' has been a huge success."

Professor McGowan closed the symposium by thanking all for their attendance and a special thanks to all the speakers. Also to Stuart Robson and the Lindsay Society for joining with the Henry Noble Group. Dr Robson concluded by thanking Prof McGowan. Without his forethought this event would not have been possible.

All the proceedings were recorded by Glasgow University for future dental historians.

The Lindsay Society's annual conference 2011 **Brian Williams, Hon Secretary**

This year's Conference was held on 7-9 October at the Aston Hotel, set in the beautiful grounds of The Crichton, just outside Dumfries in the Scottish borders. Following the highly successful one-day symposium on 'Life Long Learning', jointly hosted with The Henry Noble Research Group, our Annual Conference started in the traditional way with a drink before dinner.

The next day's programme began at 9.30am with Dr Paul Riley's paper entitled 'The History & Application of Fluoride in Oral Care'. He reminded delegates that fluoride is a naturally occurring substance which has been used, not only in toothpaste, but in such diverse applications as metal flux and the atomic bomb!

The dental story started in 1822 when a dentist, Frederick McKay first described tooth mottling in the population of Colorado Springs USA. McKay, along with others, deduced the 'Colorado Stain' was likely to be due to the naturally occurring fluoride in the town's water supply. The first clinical trial with fluorine didn't take place until 1896; only in 1934 was the first fluoride toothpaste patented in America. Over the years many combinations of fluoride in toothpaste have been tried, some more successful than others. It was found that sodium fluoride reacted with the toothpaste filler calcium carbonate to produce calcium fluoride which had no cariostatic effect whatsoever; whilst stannous fluoride caused staining - not a good advert for toothpaste. Most fluoride toothpastes now contain sodium monofluorophosphate: Colgate introduced MFP in 1969. It was not until 1975 that the BDA finally endorsed fluoride toothpastes. They have

finally come of age. Paul's very informative and highly entertaining lecture set the tone for the rest of the Conference.

Stuart Robson, our Chairman, presented a slightly light-hearted paper on 'The Trails and Tribulations Associated with Dentists' Advertising'. Stuart reminded the audience that before the first Dentists Act of 1878 it was a free for all. Anyone could advertise their exaggerated skills, or lack of them, as a 'puller of the teeth' to the unsuspecting public. But following the introduction of this Act advertising was somewhat curtailed and further restricted following the second Dentists Act, 1921, when all forms of advertising to the general public were banned. Even the size of the professional plate outside the surgery premises was regulated. But all changed in 1986 when advertising to the public was once again allowed. The Office of Fair Trading stipulated that the advert must be legal, decent and truthful. The dental advertising flood gates were now open wide!

Stuart Geddes then showed illustrations of dental advertising from around the world including envelopes, tickets and stamps and finished right up to date with a van advertising 'Mobile Teeth Whitening'.

Michael Trenouth then presented 'The Development of the Norm Concept'. He suggested normal could have different meanings. Normal could be healthy, as in no pathology, or ideal, as in perfect or average. Andrews proposed six key components for the normal (ideal) occlusion; molar relationships, angulations, inclination, no rotations, no spaces and a flat Curve of Spee. Facial aesthetics were 'developed' by Angle using composite photographs to produce beautiful faces. Whilst Sir Arthur Keith used cephalometrics to measure facial angles, Broadbent developed the cephalostat and Graham Rabey used morph analysis to help to define the norm; the 'normal' appearance to which the general public aspire. Michael's talk proved there is much more to a beautiful smile than one could possibly imagine.

The final speaker Saturday morning, Gordon Mann, told us a little about the history of the Crichton Estate in which our hotel is situated. The area is named after James Crichton who qualified at the end of the 18th Century and immediately went to India where he made his fortune from the opium trade. Returning home he married Elizabeth but died soon afterwards. She initially wanted to found a university in his honour but the authorities conspired against her. Instead, in 1820, she built Crichton Hall as a lunatic asylum with Dr Rutherford in overall charge. The asylum was very advanced for the time with a 1:1 nurse/patient ratio. The wealthier patients had their own rooms. For the poor Solway Dormitory as built with the magnificent church completed in 1901 under the direction of Mr A Sydney Mitchell, the chief architect for the estate. The asylum as taken over at the founding of the NHS but in 1995 Dumfries Council bought the main site and set up the Crichton Trust. In 1998 the interdisciplinary studies of Glasgow University arrived followed by the University of West Scotland and Dumfries and Galloway Agricultural College. There are now 10,000 students on a 100 acre campus. The Aston Hotel opened in 2006. Gordon's enthusiasm for the Trust was 'infectious' and many questions were asked at the end of his talk.

The afternoon took the form of an outing to Portrack Gardens where the land has been contoured into stunning landforms and terraces interspersed with water features and amazing sculptures. The gardens were designed by Charles Jencks and the late Maggie Keswick and are still evolving. The written word cannot do justice to the multitude of landscapes and vistas 'hidden' around every corner and names like the Garden of the Six Senses and The Garden of Cosmic Speculation only add to the wonder. A truly unique garden with everyone wanting to return for a second visit.

The Hotel did us proud for the Lindsay Society's Annual Dinner with good wine, excellent food and sparkling conversation all flowing with abundance throughout the evening.

Sunday started at the crack of dawn, well 9.30am to be precise. Sophie Riches from the BDA Museum talked about the development of oral histories, with special reference to The John McLean Archive 'Seeking to create oral histories of oral history – documentary history of dentistry since 1948'. Sophie explained that recording of oral histories stretch back into antiquity when Zhou recorded (wrote down) people's sayings in the China 1000 BC. Similar recordings were made of the Aztec in 1590 and during the French Revolution at the end of the 18th Century. By the 19th Century the method fell into disfavour in Europe but continued to be used in the USA. It grew in popularity again during World War II with Lt Col Marshal of the US Army spearheading the revival. By 1948 a Modern History Archive was established in Columbia University and in the 1950s recordings started of minority groups in Scotland. Oral histories give multiple accounts of the same event or issues thus giving a more rounded opinion of what really did happen. The voices bring 'history' alive as no other media can, shed light on personal motivations and can be a step in the healing process within a community. Others would say memory is very unreliable, easily creating false memories and possibly trivialising the events in question. However, even with these possible drawbacks oral histories are becoming more popular in 'documenting' the past.

To maximise the effectiveness of the John McLean Oral History Archive well defined aims and objectives were laid down to cover the following topics: Regulation of the Dental Profession, Changes in Dental Practice, Dental Education and the roll of DCPs. Data will be collected through oral history interviews and witness seminars, the first of which took place on 25 March. Sophie promised to keep the Society updated as the archive develops.

Over coffee archival dental films were shown much to the interest and some amusement of the delegates.

The final presentation of the Conference was by David McGowan on 'Pictures from the Menzies Cambell Collection'. Born in Paisley on 9 June 1887, the son of an 'inspector of the poor', he qualified Glasgow LDS in 1911 and was awarded the DDS Toronto in the following year. Returning to Glasgow to practise Menzies Cambell was appointed to the staff of Glasgow Hospital no less than three times during his eventful career! In 1964 he bequeathed his books to the RCS England and his 104 dental pictures to RCS Edinburgh, but nothing to Glasgow! The

earliest paintings date from the 16th Century but most are from the 18th and 19th Centuries. They show all aspects of early 'dentistry' from the grotesque to the frightening and funny. The whole of life is on show and in his selection of pictures David manages to show the essence of the Collection.

The 49th AGM followed in which Stuart Robson and David McGowan were warmly thanked for organizing such an excellent Conference. Following a buffet lunch the delegates left for home.

THE 49th AGM of the Lindsay Society Brian Williams

The Annual General Meeting was held at the Aston Hotel, Dumfries on 9 October 2011. 27 members were present. The minutes of the previous AGM were agreed.

The Chairman, Dr Stuart Robson, reported on another successful year for the Society. For the first time it had joined with the Henry Noble Research Group for a highly successful one day seminar on the history of dental education. Many delegates attended both events. Dr Robson expressed the wish of perhaps more collaboration in the future. On behalf of all the delegates Brian Williams thanked David McGowan and Stuart Robson for organizing an excellent combined Henry Noble/Lindsay Society Conference. All agreed.

The Lilian Lindsay Memorial Lecture was given at the BDA's Annual Conference in Manchester. Tara Renton, Professor of Oral Surgery at King's College London Dental Institute, spoke on 'Treatment of Oral Pain through the Ages', a *tour de force* presentation which was very well received by the large audience. The Memorial lecture at the BDA Conference in Manchester will be given on Saturday 28 April 2012.

Next year will be the 50th anniversary of the Lindsay Society. The Golden Jubilee celebration will be held in Cardiff between 5 and 7 October. Plans are afoot to make the occasion a 'bit of a do'. Ideas to make the Conference a 'bit special' are being sought.

With great sadness the Chairman reported the death earlier this year of Ian McIntyre, a Committee Member known personally to many members. He will be greatly missed. On behalf of the Society, good wishes and flowers were sent to Joan, Ian's widow.

The Treasurer, Peter Frost, presented the accounts for 2010/11. He reminded everyone the subscription rate was now £25 per annum, due at the end of October. The current account stands at £2958.67 with the reserves now £8659.00, slightly down on previous years. At the moment there is an operating deficit, partly due to the donation of £1000 to the BDA fund towards for the acquisition of 'The Dentist' painted by Sir John Lavery. John Vesty was reappointed as honorary auditor.

Stanley Gelbier, the Editor, was unable to attend to present the report on Dental Historian to the Members. In his place Brian Williams gave the report noting preparation of the 55th edition is nearing completion and should be ready

for publication in January 2012. Stanley will be standing down from the editorship following publication of the forthcoming issue. His place as editor will be taken by Gordon Watkins. A vote of thanks was proposed for Stanley in recognition of all the time and expertise he has given to the Dental Historian over the years. All agreed.

Progressing in getting an English Heritage 'Lilian Lindsay Blue Plaque' is still progressing, but very slowly. However, we are confident Lilian Lindsay will have a plaque in her honour eventually.

Officers & Committee: Stuart Geddes was elected as Chairman-elect to assume the Chair following the 2012 AGM in Cardiff.

The elected members of the Committee are Robin Basker, Stanley Gelbier and Mary McFarlane.

Honorary Member: Peter Frost nominated Professor Stanley Gelbier as an Honorary Life Member of the Lindsay Society in recognition of his outstanding contribution to the Society over many years. It was unanimously agreed.

The Henry Noble History of Dentistry Research Group Rufus M Ross, Chairman

There is not a great deal to report since the last communication. The executive committee, chaired by Professor McGowan in my absence, met on 9 August at the Centre for the History of Medicine as the usual Postgraduate Centre was not yet usable after the flooding. A number of items have been salvaged and stored in members' garages. Many of the old photographs are being restored by John Davies, one of our members.

The main activity of the Group has been by Professor McGowan in collaboration with members of the Lindsay Society in the organisation of the Dumfries Symposium. He has arranged for audio-visual recording at the Symposium. In addition he has unearthed archival dental films which it is hoped to show in the lunch interval.

Due to increased expenses it was decided to raise the membership subscription to £15 with overseas rate at £20. This is mostly due to increased expenditure on postage.

The Witness Seminar held in May 2010, 'The Impact of the National Health Service on the Practice of Dentistry', has now been published in an A5 booklet and distributed to all members and subscribing bodies.

The speaker for the Spring lecture in 2012 will be Dr Maureen Park, on the history of art associated with dentistry. The Autumn lecture will once again be combined with the Menzies Campbell Memorial Lecture.

LETTER TO THE EDITOR

Dear Sir

The cover illustration of *Dental Historian* Number 54 (July 2011) was a calendar produced by the North of England Dental Company in 1888. Five addresses are shown on the calendar. The accompanying description states that no information has been able to be found about these listed addresses.

Kelly's 1890 trade directory for the County of Durham lists the North of England Dental Company at one of these addresses, 57, High Street, Stockton-upon-Tees. The proprietor is shown as Henry James Jones. He is not listed in either the Dentist's Register or Register of Pharmaceutical Chemists and Chemists & Druggists, although there is a Thomas Glynn Jones with an address in South Stockton in the Dentists Registers from 1879. This Jones, who might be related to Henry James Jones, was "in practice (with pharmacy) before July 22, 1878".

In addition there is a photograph of Church Row, Darlington on the internet at:

<http://ww2.durham.gov.uk/dre/pgDre.aspx?&SEARCH=By+Keyword&TERM=Advertising&ID=DRE9456>

One of the buildings in the photograph bears a sign for the North of England Dental Company. The description states that the picture was taken between 1880 and 1894. Whelan's 1894 Trade Directory for the County of Durham lists the North of England Dental Company at Horsemarket, Darlington and gives Henry Bowket as the manager.

With regard to the other four addresses listed on the calendar, Whelan's 1894 Directory shows 69 North Street, Durham occupied by a confectioner, and 38 High Street, Spennymoor by a chemist and druggist. Most of the premises listed in South Road, Bishop Auckland have no number but there is a dentist occupying one of the addresses. Although 18 Market Place, South Shields does not seem to be listed number 17 is a chemist.

Further research would, no doubt, elucidate more details.

Yours sincerely

Dr John F Beal MBE, PhD

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BOOK REVIEW

Stanley Gelbier

John Bradley, *A history of the Oral Surgery Club of Great Britain*, Lincoln: Sorejaw Publications, 2011, 67 pages, £8.90 (available from Amazon Books).

The book is updated from an earlier script for a Lilian Lindsay Memorial Lecture with the addition of more photographs and a short biography of Rupert Sutton Taylor. This interesting history of an important dental club is written by John Bradley, a longstanding member of the Lindsay Society. Its 67 pages present a veritable mine of information and will be of interest to dental historians and oral surgeons. It follows the story of the club since its origins, conceived by Rupert Sutton Taylor. He is regarded as the first UK practitioner to restrict his practice to oral surgery and to call himself an oral surgeon. In 1936 he invited five people to form a steering committee: Prof T Talmage Read of Leeds, Prof Frank Wilkinson and L Wilson of Manchester, T Hall Fenton of Grimsby and Major S H Woods of Millbank Military Hospital, London. The object was to advance the science and art of oral surgery. From the beginning it was established that all members should present an annual paper to their colleagues, ensuring they maintain an active mind – an early form of continuing education. However the social side was not neglected. They held an annual dinner and the early minutes indicate the hour when wine would be served, which would cause a break in any committee meeting.

Over the years there can hardly have been any leading oral and maxillofacial surgeon who was not a member of the club. In the 1950s the proportion of London members was restricted to 25 per cent, to ensure a good geographic spread. The maximum active membership was restricted to 50 members working in the UK. However honorary membership allowed foreign dentists to be members by invitation, including such well known names as Professor H Obwegeser of Zurich. By 2007 there were 48 active and 57 honorary members.

In 1937 Prof Talmage Read was the first president; in 2010/11 it is K Lavery of East Grinstead. Sutton was first honorary secretary (1937-63), an enormous period of service; A Lyons took over in 2009. The first honorary archivist was A W Moule (1980-1988); from 2011 it is A Sadler.

Meetings are held throughout the country supplemented by trips abroad, usually in Europe but occasionally the USA.

It would be helpful if in future revisions all the figures could be numbered



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NATIONAL HONOUR

Heartiest congratulations to Professor George Camilleri, former dean of the Malta Dental School, who has been awarded the Maltese version of Pour le Mérite.

