Frederich Archer, *The Painkiller Polka*

*Cunningham Boosey & Sprague, c. 1899.*
*Sheet Music, Front Cover*

*Wellcome Images, London*
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The Goodall Symposium 2015

Carol Parry, Library and Heritage Manager, RCPSG, writes:

This year’s Goodall Symposium on the 11 June 2015 at the Royal College of Physicians and Surgeons of Glasgow will be devoted to the history of dentistry. Following refreshments, the evening’s talks will begin at 6.30 pm when Professor Richard Welbury will outline the development of current Child Protection policy in the UK, illustrating the landmark cases that have dictated change. Dr Kevin Jennings, the next speaker, will talk on the history of tooth replacement. Following a tea and coffee break, the Goodall Memorial Lecture will be given by Professor Stanley Gelbier, Honorary Professor in the History of Dentistry at King’s College, London. Professor Gelbier’s title is ‘From a Trade to a Profession’. The evening will be an important event for all who are interested in dental history and there will be a display of dental instruments to accompany the lectures. The event is free but booking is essential. To book a place please email: library@rcpsg.ac.uk

HNHDRG Autumn Lecture 2014

We were delighted to welcome Dr Barry Berkovitz to Glasgow Dental Hospital and School on the evening of 27th October 2014 to deliver our Autumn Lecture. Dr Berkovitz is the Honorary Curator of the renowned Odontological Collection of the Royal College of Surgeons of England. His title was ‘Nothing But The Tooth’; the lecture was accompanied by a series of fine illustrations. The audience heard about the history of the Collection, John Hunter and the early transplantation of teeth and particularly the influence of those stalwarts of Dental History, John and Charles Tomes. The former’s collection of human jaws and skulls and his pathological exhibits are deposited with the College. Charles Tomes’ collection of 1900 microscope slides illustrating the dental development of many different species is also part of the Odontological Collection. The slides are in pristine condition; they were carefully prepared and inscribed by Tomes himself using a diamond pencil. The Royal College of Surgeons of England also holds one of the late Sir Winston Churchill’s gold partial dentures and Dr Berkovitz used this item to surmise whether the very different speaking styles of the late British Prime Minister and that of Adolf Hitler were influenced by their dentition. Hitler, who was a confident, loud, belligerent speaker, had complex bridgework whereas Churchill had a small, upper, partial denture and while being an effective orator, had a more reserved style of speaking. Among other topics, Dr Berkovitz also spoke of the influence of Horace Wells (1815-1848) and William Morton (1819-1868) on the development of general anaesthesia.

Sir Charles Sissmore Tomes’ Notebook

Those of our readers who could not attend Dr Barry Berkovitz’s lecture at Glasgow Dental Hospital and School on 27th October, 2014 [described above], will be delighted to know that he has written an article for Dental History Magazine on one of the subjects which he covered on that evening. The discovery and contents of Sir Charles Sissmore Tomes’ notebook is an absorbing story and is accompanied by many illustrations from this unique piece of work which is part of the Odontological Collection of the Royal College of Surgeons of England.

Warren Harvey: A Scholar And A Gentleman (Part II)

Robin Orchardson continues his account of the life and career of the ground-breaking, forensic odontologist Warren Harvey (1914-1976). In Part I, [DHM, 8:2, 2014, pp. 7-9], Dr Orchardson discussed the foundations of Harvey’s work. In this concluding article, he considers his Glasgow based research, notably, The Biggar Murder Case and Harvey’s contributions to studies on the mortality of
dentists, the necessity of keeping good dental records, the marking of dentures to assist identification and his work with the founder of the HNHDRG, Dr Henry Noble (1925-2004), on the Mandible and Inferior Alveolar Nerve.

**Reminiscences: Part I. Pat Lilly Recalls The Biggar Murder Investigation**

**Part II. Mr Lilly Finds More Than Spirits In An Old Edinburgh Public House**

Pat Lilly is a member of the Executive Committee of the HNHDRG where he is Assistant Secretary. From 1972 to 2006, he was a prosthetics instructor at Glasgow Dental Hospital and School. In this edition of our occasional series, ‘Reminiscences’, he describes the prosthetics laboratory investigation into the murder of Lanarkshire teenager, Linda Peacock in 1967. He also recounts a visit to the ’Jekyll and Hyde Bar’ in Edinburgh’s Hanover Street, where he finds an unusual piece of interior design.

**1916: The Foundation Of Military Dentistry In France**

Xavier Riaud explores the influences which led to the foundation and development of the French Military Dental Service. In particular, he considers the personalities at the centre of these events.

**The First French Book On Dentistry**


**Letters**

Dr Robin Orchardson answers a question from one of our correspondents: ‘How is there a difference between the local anaesthetic syringe volume in the UK and the USA?’

Pat Lilly draws our attention to ‘Dental Suffragettes—Women In Dentistry’ by Edwina Kidd.

**Web News**

Carol Parry recalls ‘Painless Parker’ and discusses the online catalogue of the dental museum of the Kornberg School of Dentistry. This edition also considers an ancient Ethiopian mandible which might well reveal important information about the dawn of humanity. Plus, an invitation to the ‘Coffee Conversations’ at the Royal College Of Physicians And Surgeons Of Glasgow.

**Word Of Mouth: Fifty Shades Of Enamel McTeague By Frank Norris**

When it was published in 1899, Frank Norris’ novel *McTeague*, the story of a San Francisco dentist, caused general outrage. Neither the American public nor its literary critics were ready to accept the book’s exploration of human nature under the dark optic of natural philosophy and social Darwinism. Although it was written more than a century ago, *McTeague*’s treatment of sadomasochism and the author's racist and misogynistic tone are still disturbing to read but the work has rightly become a classic of early twentieth-century American fiction. It is impossible to deny Norris’ skill as a writer, his superb storytelling and razor sharp observation. Those of our readers who are familiar with Emile Zola’s *L’ Assommoir* will recognize the source of Norris’ literary style. The book is of particular value to dental historians who are interested in late nineteenth-century dental practice. *McTeague* provides detailed descriptions of dental procedures and materials during that period which are probably unparalleled in fiction.

A truncated version of Erich von Stroheim’s 1924, silent film version of *McTeague* (re-titled *Greed*) which includes dental sequences can be viewed on *YouTube* at [www.youtube.com/watch?v=40K0xkqh1u4](http://www.youtube.com/watch?v=40K0xkqh1u4)
The Badge Of Glasgow Dental Hospital And School

Our thanks to Bill Smith of the HNHDRG Committee for providing the back cover for this edition. Bill served as Honorary Secretary to the Glasgow Dental Hospital Alumnus Society and during his time in office he received a letter dated 30th January 1980, from Henry Gray, a retired Chief Dental Officer for Derbyshire County Council. The letter discussed the origins of the Badge of the Glasgow Dental Hospital and School and gave a description of the meaning of various elements of the design. No doubt, many of our readers will still have pleasure in sporting scarves, ties and blazers bearing this exclusive motif. A report about the Badge can be found in, The History of the Glasgow Dental Hospital & School 1979-1989: Ten years on from Tom Brown Henderson, William Smith, p. 49.

Report Of The 2014 Lindsay Society Meeting Held In Durham

From Dr Brian Williams, Honorary Secretary of the Lindsay Society.

The 52nd annual conference of the Society was held in Durham between Friday 10th – Sunday 12th October with over 50 delegates and partners attending. The weekend followed a similar format to previous years with an informal ‘get together’ on the Friday evening; in this case a Tapas Bar in the heart of the city. The Saturday morning lecture session included ‘Dental Analysis in Archaeology’ presented by Roger Forshaw. This was followed by Barry Berkovitz, giving part two of his highly entertaining lecture at last year’s conference about the lesser known facts and oddities within dentistry – ‘Nothing but the tooth’. The final presentation of the morning was the screening of the 1966 ground breaking film ‘Insertion of an Osteo-odonto-keratoprosthesis’ introduced by John Bradley, one of the surgeons involved in this pioneering procedure.

A trip to Beamish Living Museum was arranged for the afternoon, with an excellent Conference Dinner enjoyed by all at the Hotel that evening. Back to lectures the following morning with Stanley Gelbier reminding delegates of the importance the London Hospital played in the development of dentistry in and around the capital between 1857 – 1957. The final dental lecture was given by Rebecca Little on the subject ‘Historic Dental Practices through Art’. Rebecca has only recently graduated as a dentist and presented a most interesting insight into dentistry through the medium of paintings.

Once again we were fortunate with good weather for the visit, excellent food and exceptional service at the hotel and, as ever, good companionship.

The 2014 Annual General Conference of the Lindsay Society

The AGM was held immediately after the formal lecture programme finished. It was especially notable this year with the installation of the first President of the Society, following the decision at last year’s AGM to change the title from Chairman. Rachel Bairsto was installed with the new chain of office by two past Chairmen of the Society, Stuart Geddes and Stuart Robson, who had most generously presented the Presidential Medal to the Society. John Bradley had made and presented a beautiful ripple sycamore gavel to the Society in 2013. Following the addition of the inscription, ‘John Bradley – fecit’, requested by the Society, the gavel was represented to the Society and immediately put to good use making the appropriate bang at the presidential inauguration! Details of the next Lindsay Society Conference in October 2015 can to obtained from the Hon Sec. Brian Williams (brianwilliams14@btinternet.com)

Shakespeare’s Curse Hath No Bite

Academics have called for William Shakespeare’s supposed grave at Stratford-Upon-Avon to be opened in order to subject his remains to scientific analysis in a similar way to those of Richard III. However the Bard was known to fear exhumation and penned the following curse, ‘Good Friend for Jesus sake, forbear to digg the dust enclosed heare. Bleste be the man that spares these stones and curst be he that moves my bones.’ It would take a brave man or woman to ignore the warning but Professor Thackery of the University of Johannesburg has argued that the curse could be circumvented by simply exposing the bones to a high resolution laser scan which would yield forensic information without moving the remains or destroying any tissue. He also notes that Shakespeare does not mention teeth so a sample of enamel could be safely removed and tested without invoking the curse.
I was privileged to succeed Professor Loma Miles as Honorary Curator of the Odontological Collection at the Hunterian Museum of the Royal College of Surgeons of England. This appointment was made in 1989 by the Odontological Section of the Royal Society of Medicine, reflecting the origins of the Collection. The Collection is of international importance, both historically and scientifically, containing over 11,000 skulls, both animal and human, and numerous other dental artefacts. Following my appointment, I remember being shown round the Collection by the then Curator, Dr Caroline Grigson. I particularly recall her showing me the Tomes Collection of histological slides. This important donation is referred to in the Quarterly Report of 1920 by the Conservator at the time, Professor Arthur Keith, in the following terms:

“…..a letter was received from Sir Charles Tomes offering to present to the college all the sections of teeth made and used by the donor and his father in their researches on the comparative anatomy of teeth. The series thus offered is of the utmost value to all who are investigating the microscopic structure and morphology of teeth”.

Sir Charles Sissmore Tomes was born on 6th June, 1846, which also happens to be my own birthday. He died aged 82 on 24th October, 1928.

The Tomes Collection consisted of nearly 1900 histological slides housed in a tall, glass-fronted, elegant wooden cabinet, at the top of which was a brass plate inscribed with the words ‘Tomes Collection’. As a dental anatomist, I felt in awe as I carefully opened some of the drawers to inspect the slides prepared personally by the two giants of our emerging profession, John and his son Charles. In the larger, bottom drawer, there was a notebook, which I carefully opened and saw numerous pencil drawings accompanied by lots of written text. At the time I concluded that this notebook must have belonged to either the father or the son and made a mental note to look into the subject in more detail when the opportunity arose. Unfortunately, this never happened.

Fast forward nearly 25 years, by which time I had retired from academic life and was still the Honorary Curator of the Odontological Collection. It was approaching the bicentenary of Sir John Tomes’ birth in 1815, and I decided to be ready with a presentation for this event should the need arise. Now I had the time, I chose to investigate the Tomes Collection of histology slides. I would take up the challenge of looking through all the slides. From the recesses of my mind after an interval of nearly 25 years, the image of the notebook resurfaced.

My first task was to seek out the cabinet containing the Tomes Collection but, despite my efforts, I could not locate it. When I asked the museum staff where it was, they had no knowledge of it. Although the slide collection still existed, it was not housed in its original cabinet, but in a specially constructed new cupboard containing 47 large drawers, with about 40 slides per drawer. The mystery of the missing cabinet was solved when I learnt that, during building works to refurbish the Hunterian Museum in 2003, someone had deemed the cabinet to be an unsafe structure and it was sold to a specialist furniture dealer. Regrettably, its present whereabouts are unknown.

Following this disappointment, I then made enquiries about the notebook. No one had any idea what I was talking about. There was no record of such an item in the museum catalogue. This made me think that perhaps I had dreamt the whole scenario. I spent the next few months happily looking through the histology slides in the Tomes Collection. One afternoon a member of staff, who had been tidying up one of the storage rooms, asked me if a small notebook she had found was of any interest to me as, in flicking through it, she had noticed some drawings of teeth. She presented me with an old notebook. My heart started racing and my instant thought was - could this possibly be the Tomes notebook? A quick look inside confirmed it was none other than the one I had encountered nearly 25 years earlier.
The notebook (Fig. 1-Archives catalogue number OM/31) is rectangular, its dimensions being approximately 17.5 cm x 12.5 cm. It is dark in colour with a thin gold-coloured band at one end and has a narrow pencil holder along its border. It contains 31 pages, most of which have been used on both sides, although there are eight sides remaining blank. The notebook is in a single hand and can only have belonged either to Sir John or Sir Charles Tomes. At the outset, there are four strong reasons why I attribute ownership to Sir Charles Tomes.

1. Sir John Tomes’ scientific work was undertaken up until about 1856, after which it ceased and he devoted the last forty years of his life to the political aspects of turning dentistry from a trade into a profession, establishing a dental hospital to train dentists, a body to supervise examinations, and an association (The British Dental Association) to regulate it. As will be seen, dated entries in the notebook related to scientific enquiry were made much later than 1856.

2. Many of the illustrations in the notebook are of very high quality. Sir Charles Tomes was known to be an extremely talented artist and had one of his paintings accepted for the Annual Summer Exhibition at the Royal Academy.

3. Most importantly, a number of illustrations in the notebook have been reproduced in every detail in Sir Charles Tomes’ major textbook ‘A Manual of Dental Anatomy. Human and comparative’, the first edition of which was published in 1876, well after Sir John had ceased scientific research.

4. Analysis of the handwriting indicates a match with other handwritten letters by Charles Tomes and differs from the handwriting of John Tomes.

The majority of pages in the Tomes notebook have handwriting and drawings on both sides, mainly in pencil. There is a very limited amount of writing in ink, chiefly listing dental formulae of animal dentitions. Each page typically contains a drawing with accompanying notes, the notes illuminating the dentition. The subject matter chiefly concerns the morphology of the dentition of a range of animals, mainly mammals, but also with some fish. In addition, there are some drawings related to dental histology and human pathology.

Fig. 2 shows two fairly simple diagrams. One is unaccompanied by text (Fig. 2A) and can be immediately recognised as a section through the beak of a puffer fish. Fig. 2B is recognisable as a deep-sea fish, the viperfish, with the species *Chauliodus sloami* clearly indicated, and is...
accompanied by a description of the dentition, the main feature being the enormous size of the fang-like teeth at the front of the mouth. Ascending in quality, Fig. 3 is a more detailed drawing of the dentition of a member of the elephant shrew family (*Macroscelis*). Interestingly, the specimen is acknowledged as coming from the collection of R F Tomes, an important naturalist and another family member.

It shows an instantly recognisable cross-section of dentine tubules, each with a halo representing peritubular dentine. The reason it is coloured red is due to the fact that the section has been stained with carmine red. The accompanying text states: "Healthy young dentine. calf. The strongly defined central spots are colonised with carmine red. The central spots are $\frac{1}{3}$ diameter of the clear area".

Further drawings from microscopic examination relate to bone, enamel, dentine and dental cement. Figure 5 shows drawings and text related to enamel. The top drawing is copied from a paper written in 1866 and represents functioning ameloblasts. The labelling draws attention to the presence of an ameloblast with its ‘Tomes process’. This eponym relates to his father, John Tomes, and it must have been Charles who was mainly responsible for ensuring his father got credit for his discoveries of the Tomes process, the granular layer of Tomes, Tomes fibril (odontoblast process) and the resorbent organ of Tomes (effecting root resorption in deciduous teeth). In the lower part of Fig. 5 is an area outlined by a red box within which are longitudinal and cross-sections of enamel, the longitudinal section showing cross striations (Fig. 6). The reason for the box is readily understood when one refers to Charles Tomes’ major textbook entitled ‘A manual of dental anatomy. Human and comparative’.
The first edition, published in 1876 became the standard textbook for decades. This book reflects the enormous contribution made by Charles Tomes' research in comparative dental anatomy, a topic dear to my heart. I own copies of both the 4th and 8th edition, the latter published in 1923 and by then edited by H W Marett Tims and C Bowdler Henry. The identical diagram within the red box appears in this textbook (Fig. 7). There are a number of other diagrams in the notebook that are reproduced in Charles Tomes' textbook. For example, Fig. 8 shows a drawing of the deciduous dentition of a vampire bat (Desmodus) taken from the notebook. Above the image are the words "for 3rd edition." Fig. 9 shows the same image introduced for the first time in the 3rd edition of Tomes’ textbook.
The notebook also attests to Tomes travelling to America in 1872. Fig. 10 shows a page with three detailed diagrams. Top left shows a maxilla, while that in the lower half illustrates a horizontal section between two adjacent molar teeth, with the left tooth having an abnormal morphology. The top left diagram attests to be of a specimen in the Baltimore Medical Museum and drawn on February 19th, 1872, while the lower diagram is of a specimen in the Medical College Museum Boston drawn on February 23rd, 1872 (Fig. 11).

As his father, John Tomes, ceased all scientific work in the last 40 years of his life (eg. approximately 1856-1895) to the important political goal of establishing dentistry as a profession, it fell to his son Charles to edit further editions of his father's influential book on dental surgery. To this end he inserted his own diagrams into later editions. Evidence of this is in his notebook. For example, the drawings in Fig. 10 are reproduced as illustrations in the 3rd edition, published in 1887. Another, beautifully observed, drawing is illustrated in Fig. 12. This is accompanied by the following text:

"From an ovarian cyst. Boston Med. Mus. Feb 29/73. On this piece of bone are 17 teeth in all, and 13 upon another. Some of the teeth resemble canines fairly closely & others bicuspid and molars but there is no sort of regularity in their arrangement nor can I see any resemblance to a maxillary bone."

Beneath the drawing is pencilled ‘Fig for Dental Surgery for 3rd edition’. Fig. 13 is the identical image appearing in the 3rd edition of John Tomes’ ‘A system of Dental Surgery’ revised by Charles Tomes and published in 1887.

One final and unexpected surprise was contained in the notebook. Inserted between two pages was an unattached, black and white photographic print containing a microscopic image of a section of a jaw with three developing tooth germs (Fig. 14). A search through the various editions of Charles Tomes' textbooks revealed an identical image in the 3rd edition, but not in any subsequent editions (Fig. 15). On close examination, the image seemed a little familiar to me. I remembered that the Tomes Collection of histology slides, although overwhelmingly of ground sections, contained a few demineralised sections stained in haematoxylin and eosin and showing stages of tooth development. On looking at these slides again, I found the original slide that Tomes had photographed and included in his textbook (Fig. 16). The slide had what appeared to be a label from a commercial supplier, namely JJ Andrew, Belfast, accompanied by the words "foetus, upper jaw".

The discovery of the notebook reveals some insights into one of the giants of scientific dentistry. It travelled with him and was used to jot down many things of interest that he encountered. It brings a personal touch to a figure who might seem somewhat remote in time and whose achievements...
are in the cold print of old books and scientific journals: the notebook gives him immediacy. It confirms the wide range of his scientific interests, from examining the dentition of a viper fish, noting the deciduous dentition of a vampire bat and the number and morphology of teeth in ovarian cysts.

When I was a dental student at the Royal Dental Hospital of London between 1957-1961, comparative dental anatomy was a compulsory topic and included in dental examinations. I still have my ‘Scott and Symons’, with its excellent section on comparative dental anatomy at the back. The first edition of our own oral anatomy textbook (Berkovitz, Holland and Moxham, 1978) also had a section on comparative dental anatomy. Regrettably, due to congestion of the syllabus, the topic was removed from the dental curriculum as was the comparative anatomy section in the 3rd edition of our textbook.

I can declare a further interest in Sir Charles Tomes (apart from sharing a birthday). Like me, Tomes was the Honorary Curator of the Odon-tological Collection from 1870-1880. Together with his father John, he enriched the Collection significantly by donating the Tomes Collection of histology slides, as well as human and animal skulls. Although comparative dental anatomy might appear to be of little relevance and interest nowadays to the dental curriculum, there has recently been a surge of interest in the topic outside dentistry, particularly with the development of new research techniques. These include the use of stable radioactive isotopes to reveal what an animal ate, where it lived and its climate, even in specimens millions of years old (Amiot, R. et al. 2006; Cerling, TE. et al. 2011). This relates to the hardness and stability of dental tissues with time. In addition, new techniques have enabled scientists to identify the presence and role of bioactive molecules such as growth and transcription factors and this has given new insight into how teeth develop, how they are replaced and even how they might have evolved (eg. Fraser GJ, Bloomquist RF, Streelman JT. 2008; Fraser GJ. 2009; Fraser GJ, Bloomquist RF, Streelman JT. 2013;).

Inspired by Charles Tomes and in the general lack of specialised texts on basic comparative dental anatomy, I have had a proposal to write a new book on comparative dental anatomy accepted by
Elsevier. This is being co-authored with Dr Peter Shellis. This project has only been rendered possible by the far-sightedness of people like John and Charles Tomes who saw the need for providing material necessary for teaching and research to subsequent generations and contributing to the establishment of the Odontological Collection of the Royal College of Surgeons of England. I will certainly be utilising fully both the histology slides from the Tomes Collection and the world class collection of animal skulls.

Acknowledgements
I am grateful to the Archives of the Royal College of Surgeons of England for permission to reproduce images from the notebook of Sir Charles Sissmore Tomes.

References

Dr Barry Berkovitz
Dr Barry Berkovitz (BDS., MSc, PhD, FDSRCS, LDSRCS) qualified at the Royal Dental Hospital of London in 1962. He spent 3 years as a Junior Medical Research Fellow at Royal Holloway College before moving to the Anatomy Department at Bristol University where he taught Anatomy and Dental Histology from 1966-1987. He moved to the Anatomy Department at King's College London from 1987 until his retirement in 2005. He is a Visiting Professor to the Oman Dental College, Oman. As an Emeritus Reader, he is still actively engaged in writing books and articles on various aspects of teeth. He has been the Honorary Curator of the Odontological Collection at the Royal College of Surgeons of England since 1988, through which he has gained an appreciation of dental history. This is reflected in his most recent book (2013) entitled "Nothing but the tooth" and published by Elsevier, with a version in colour as an ebook.

NOTHING BUT THE TOOTH
A DENTAL ODYSSEY
BARRY K.B. BERKOVITZ

ELSEVIER INSIGHTS
The first article on Warren Harvey by Robin Orchardson appeared in DHM, 8:2, 2014, pp. 7-9.

In this second paper, I shall deal with Warren Harvey’s Glasgow-based research. Between 1946 and 1964, Warren Harvey worked in general dental practice, firstly in Newbury and then in London. He was consultant dental surgeon to the Royal Masonic Hospital (1952-64) and participated enthusiastically in the activities of the Metropolitan Branch of the British Dental Association and the Odontological Section of the Royal Society of Medicine. From the latter he received the Colyer Prize for outstanding work. (Brownlie, 1976) Warren Harvey was also the Vice-Chairman (1949-51) and Chairman (1951-56) of the Dentist’s Provident Society.

When he was diagnosed with cancer, Warren gave up practice in London, and went to Troon, Ayrshire with his family. In 1964, Professor James Aitchison, the Director of Dental Education (Dean of Dentistry) in Glasgow Dental School, offered him a post as locum consultant to Glasgow Dental Hospital and School and the post of lecturer in forensic dentistry, University of Glasgow. Ten years, later in 1974, Warren Harvey relinquished his appointments and retired to Oswestry, Shropshire to write a book entitled Dental Identification and Forensic Odontology. In 1975, he was awarded the OBE for outstanding services to forensic odontology. He passed away on 7 May 1976. (Brownlie, 1976)

Forensic odontology

He built up a considerable repertoire of stories and anecdotes of body identification by teeth and dentures, bite-marks, and radio-opaque materials in dentistry. (Harvey, 1966; 1973) He was eager to have a universal system of marking dentures, but to date this has not been achieved. He was also a firm advocate for a universal system of dental charting, but this hasn’t happened even now. (Harvey, 1969a) The Fédération Dentaire Internationale (FDI) introduced, in 1971, the two-digit numbering system to facilitate transmission by telex and other electronic methods. But nowadays, the need for data transmission is largely superseded with the advent of modern computers and graphics. Although the FDI notation is used in some UK dental schools, dentists in the USA still use the Universal (sic) Notation; the Zsigmondy-Palmer system is still used in the UK and some of the other English-speaking nations; the Haderup system is still used by some Scandinavian countries.

Harvey will be remembered for the outstanding work in forensic dentistry and the Biggar Murder, in particular. (Harvey et al, 1968). In the Biggar Murder trial, the principal evidence to support conviction was circumstantial. The evidence incriminating the accused concerned three bite-marks on the body of the victim. These were shown to be explicable as having been caused by the accused’s teeth. They included unique ring marks made by pits in teeth resulting from hypoplasia and hypo-
calcification. The teeth of the accused showed matching characteristics. To preserve the evidence of the accused's characteristics, the unparalleled step of compelling submission to the taking of dental impressions was sanctioned. (Harvey et al, 1968) In his Foreword of the case, Simpson (1968) wrote:

“the matching of bite-marks with the suspect teeth is a comparatively rare exercise, techniques in which are still being perfected.” Simpson goes on to say, “the solution to the case rested entirely on the matching of the bite-marks left on the girl murdered, with the teeth of one suspect. The suspect was picked out ‘blind’ with an accuracy that survived prolonged cross-examination, and convinced a jury of the accused’s guilt. This was indeed a forensic triumph.”

Forensic odontology has a long history and Harvey has documented it on many occasions. (Harvey, 1966; 1973) Both criminal cases and mass disasters are clearly differentiated into those where a list of victims is available and those where the victims are unknown. Dental evidence can be most helpful in the latter. In the last few decades, dental evidence has been paramount in solving the mystery: Lockerbie bombing in 1987, World Trade Centre in 2001, the Asian tsunamis in 2004 and 2005, and the London bombing 2005. More than half of the Western deceased in the Thailand tsunamis (2005) were identified by ante-mortem dental records (Robson and Black, 2009).

Harvey was also interested in the marking of dentures. In addition to the forensic aspects of identification, there is a need in cases of psychiatric, traumatic and senile loss of memory. Such a scheme would be of use in old peoples’ homes and geriatric units, where dentures get lost. He devised simple and economical schemes to identify peoples’ dentures during the manufacture. (Harvey, 1966) He was also interested in the value of keeping adequate dental records. (Harvey, 1969b)

He presented 27 separate examples of the reasons for keeping dental records, ranging from mistaken identity (e.g. where the two people with the same surname shared the date of birth as well), inheritance and imposters. For example, in 1928 a girl claimed to be the Tsar of Russia’s daughter, but a dentist examined models of the girl’s teeth and stated she was not the Grand Duchess Anastasia. (Harvey, 1969b)

Dental History
Following the bombing of St Bride’s, Fleet St, London, in 29 December 1940, the ruins of the site were excavated. Among the skeletal material were 177 intact skulls of known age and sex, which had been interred between 1692-1852. These were preserved and examined. (Harvey, 1968) There were 92 females and 85 males and the age range was from infancy to extreme old age. He reported on the caries and periodontal disease. Only 3 of the 177 skulls had full dentitions without caries. There were 67 cases of obvious periodontal disease, and much of it was severe. There were several instances of dental treatment. There were three partial dentures, bearing natural teeth. Harvey reported:

“The dentures have a remarkably modern appearance, apart from the natural teeth in place of porcelain ones; they clearly resemble the swaged gold dentures we had to construct as students.”

(In swaging, soft metal (e.g. gold) is beaten into shape on a cast of the mouth.) There was one instance of a bridge replacing a lower first premolar tooth. The bridge was supported by a ring of gold wire round the second premolar and a gold rest on the canine. There were four restorations involving gold plugs, in individuals who died between 1820-34. Also, there was one instance of an amalgam filling in a first premolar tooth in a 24 year old man, who died in 1848.

Mortality of Dentists
Hill and Harvey (1972) surveyed the mortality of a number of professions in an attempt to show that the practice of dentistry is not associated with premature death. In doctors, dentists, clergymen and lawyers, the causes of death were studied from 1920 to 1963. The results showed that any claim based on the Registrar-General’s reports failed to demonstrate that mortality of dentists is higher than average.

Mandible and Inferior Alveolar Nerve
In collaboration with Henry Noble, Harvey surveyed over 950 mandibles and described defects on the lingual surface of the mandible near the angle of 6 bones (Harvey and Noble, 1968). All these sites had a radiolucent area and were below the inferior alveolar canal. The most probable explanation is that a localised area of surface bone resorption had progressed to a variable degree in
the mandibles examined. Whether or not there was also a similar phenomenon, e.g. Stafne’s bone cyst, was not proven. He also studied the mandibular foramen and its position in relation to anaesthesia of the inferior alveolar nerve (Harvey, 1970). Widely differing descriptions of technique exist: some of the advice available gives 11 points of entry for the needle, 6 horizontal bearings, 8 vertical bearings, 11 depths of penetration, 9 positions of the foramen, and 12 target areas! He writes, “consideration of the extensive literature on the technique and cause of failure led to the conviction that an assessment of anatomical variation relevant to this injection was of prime importance”. Some published instructions on technique were quite incorrect. Greater emphasis must be given to the wide range of normal anatomical variation. The foramen is the focal point, which must be located, whatever target area is chosen. It seems more rational to relate the point of entry of the needle to surface anatomy of the retro-molar pad, rather than “half a finger nail”! Among his letters to the British Dental Journal, he advocated using an aspirating syringe for local anaesthesia several years before it was legally required. (Harvey, 1972)

Summary

Just after qualifying in dentistry in 1939, Harvey was called up to join the Royal Air Force, where he served at the Central Medical Establishment, Farnborough. Here, the first phase of research was on the problem of pain while flying. He also conducted research on: otitic barotrauma, dental hygiene, sterilisation, bitewing radiographs, and fluoride. After being diagnosed with cancer in 1962, he gave up practice, and moved to Scotland in 1964, where he undertook the second phase of his research. He will be remembered for his massive contributions to forensic odontology, and the book, Dental Identification and Forensic Odontology, published in the year of his death. He also contributed to the reason for maintaining adequate dental records, dental history, mortality of dentists, the mandible, and inferior alveolar nerve. All in all, this was a remarkable achievement. The final word is from his obituary (Brownlie, 1976): “Our society is rather short of brilliantly endowed graduates; it is woefully short of good men. Warren Harvey combined these two rare characteristics in one delightful, humane and valiant personality.”

Acknowledgements

Once again, I am grateful to Rob Day for commenting on a draft manuscript as co-executor of the estate of Warren Harvey’s widow, Sheila, and as the representative of Warren and Sheila’s three grand children. Also, may I thank Carol Parry and Andrew McAinsh, of Royal College of Physicians and Surgeons of Glasgow and David Stevenson, of the James Ireland Library, Glasgow Dental School, for supplying references and photocopying.

References

Reminiscences
Pat Lilly
Dental Prosthetics Instructor
Glasgow Dental Hospital & School (1970-2006)

Pat Lilly is a retired dental prosthetics instructor. He is currently a member of the Henry Noble History of Dentistry Executive Committee. At the time of the Linda Peacock Murder (referred to in the previous article, see this issue pages 7-9), Mr Lilly was a member of staff in the Prosthetics Department of Glasgow Dental Hospital and School. He took part in the laboratory based investigation associated with the case.

Pat Lilly writes:
“My recollection of the involvement of the Prosthetics Department in the Linda Peacock Murder Case was that a number of potential suspects from a youth detention centre in Biggar, Lanarkshire were brought in by the Police to have impressions of their teeth taken and plaster casts made of their dentition. Earlier, a post-mortem examination of the victim’s body had revealed a bite mark on one of her breasts. The Police team investigating the crime, lead by Chief Superintendent William Muncie, hoped that they could secure a conviction by matching this mark with the dentition of the prime suspect. Muncie enlisted the help of an expert in Forensic Odontology, Dr Warren Harvey of Glasgow Dental Hospital and School, who subsequently directed the dental procedures which followed.

As I recall, the youths from the detention centre were brought to the Dental Hospital under Police escort. I remember the boys lining up in the ‘D Floor’ corridor adjacent to the Prosthetic Clinic. The clinical staff who had been appointed to take the impressions were: Professor W M Gibson, Mr J C Thomson, Mr J Hammond, Mr J P Ralph and Mr W R E Laird. The impressions were poured up in Velmix, (artificial stone). This procedure was carried out only by the Department technicians; the apprentices were not involved. Dr Harvey collected the finished work and removed the casts for investigation. As we had not been told exactly what the Police had been trying to find, there were naturally many rumours circulating in the Department about the possible results. After forty-eight years it is hard to recall the various theories but I believe that the prime suspect had a defect or defects on the crown of one or more of his canine teeth and it was matching this distinctive feature with the bite marks on the body of the victim which the police were trying to establish.”

[Editors Note: See DHM 4:1, 2010, pp. 15-21 for a full report of the case and the Police Investigation.]

On a completely different subject, Pat Lilly recalls his surprise when he finds more than spirits in an eerie, old, Edinburgh pub…

“A visit to Edinburgh is a pleasant experience and on this occasion, finding an article of dental interest in an unusual setting added to it. The ‘Jekyll and Hyde Bar’ in the city’s Hanover Street is a theme pub based on Robert Louis Stevenson’s 1886, Gothic novel, ‘The Strange Case of Dr Jekyll and Mr Hyde’. In keeping with Stevenson’s famously dark tale, the pub has many pieces of 19th century medical and scientific equipment on display. After an enjoyable meal, I had the pleasure to look around and was astonished to find, high up on a shelf, a Walker’s Phoenix Vulcanizer, which had been manufactured in Birmingham. I asked the staff if they knew anything about its origins but I drew a blank. Later, after an Internet search, I learned that over the years, the ‘Jekyll And Hyde’ had been taken over by various pub chains. I wrote to them asking for information about the Vulcanizer but none replied. I resorted to contacting the parent company by letter and this time received a courteous response from Mr Adam Hughes, the General Manager. Unfortunately not much was known about any of the items in the ‘Jekyll and Hyde’. The medical equipment had come as part of the sale of the premises and had been retained as props, solely to add to the ambience of the place. Even so, it is certainly worth a visit for anyone interested in the history of medical and dental technology”

Editor’s Note: A Vulcanizer is now an outdated piece of laboratory equipment which was used to improve the strength and resilience of early, rubber (Vulcanite) dentures by the use of heat and pressure.
When The Great War broke out in 1914, military dentistry was still in its infancy but its legal foundation had been in place since 1892. At the outset of the War, dentists were limited to acting as nurses or hospital porters but like many of their comrades of higher rank, they played their part, often showing conspicuous bravery sometimes at the expense of their lives. At The Battle of Yser, Jean Piel Melcion d'Arc of the Zouave Infantry, was mentioned in dispatches when he was, ‘heroically killed on November 13th, 1914’ while defending a bridge which the Germans had tried to capture. He was subsequently honoured by his Regiment (Riaud, 2008). Another dentist, Adrien Audefroy, of the 44th battery of the 28th Field Artillery was also distinguished for his courage in action. It was noted that, ‘Even though he [Audefroy] had been under heavy fire for two consecutive days, he remained stalwart, maintained his position and kept up the morale of his men, thus effectively undermining the enemy troops.’ (Augier, 1986).

By the autumn of 1914, there were signs that attitudes towards dentists in the military were beginning to change. On October 15th of that year, a Ministry Circular incorporated dentists into the ranks of military nurses, thus enabling them to practise their profession and ensure emergency care for servicemen but they were still required to be combatants in the war as well as dental surgeons. On the very same day, the first dental unit for the campaign was opened in Clermont-en-Argonne under the supervision of Armand Lévy, a physician assistant with the order of ‘first class’.

On October 30th, numerous petitions were signed by dentists and their associations calling for the appointment of a Chief Dental Officer. On November 10th, another Circular announced the opening of stomatology and maxillofacial prosthetics units in Paris, Lyon and Bordeaux. Val-de-Grâce was the first of these units in the capital city (Ferret-Dussart, 2004). On 21st of December, dental surgeons and technicians recruited from the health brigades or troop corps, were assigned to the field hospitals for the specific purpose of providing acute care for those who had suffered maxillofacial injuries; they dressed wounds and applied temporary restraints to fractures. It was also recommended that qualified dentists should provide dental treatment for front line troops.

Another Circular dated December 24th, allowed the regional directors of the Health Service to appeal for volunteers to ensure the functioning of dental units in garrisons where there were no mobilised dentists. (Augier, 1986; Calcot, 1993).

Early the following year, on March 10th, 1915, the regulations of the Higher Consultative Commission of the Health Service were published. Although these regulations were not implemented immediately, dental surgeons were to be appointed in each dental unit of every regiment. A mobile dental surgery, staffed by a dental surgeon and a technician was provided for each corps of
Dental surgeons who were not otherwise assigned remained designated as military nurses. On April 14th, 2015, the War Minister, Alexandre Millerand, promulgated a letter in which he acknowledged the services of the Dental School of Paris in providing soldiers with health care. On May 10th, the same Minister approved the cooperation of the Relief Committee in aiding soldiers with maxillofacial wounds. On June 11th, the Dental School was ordered to provide a 200 bed facility for the soldiers with severe facial injuries. The convalescent hospital at the Lycée Michelet in Vanves was subsequently utilised for this purpose, together with the Dental School of Paris which provided the staff and material resources. (Konieczny, 1992).

On July 1st, Justin Godart became the Under-Secretary of State for the Health Service. Only a short time afterwards, on July 31st, he inspected the first mobile dental unit. On the same day, he issued a Circular stipulating that edentulous soldiers were to be fitted with prostheses within 15 to 20 days.

On August 25th, Godart visited the Lycée Michelet where he saw first hand evidence of the terrible plight of soldiers with facial disfigurement. Godart decided to act promptly on their behalf as some French newspapers were already drawing attention to the fact that there was a lack of dentists on the stomatology teams (Petit Journal, 20th August 1915, France de demain, 21 August, 1915 and L’Humanité, 29th August, 1915). On August 31st, he summoned the head of the Dental School of Paris and asked him to write a report which would support the founding of a Dental Service and also the appointment of an Army Dental Surgeon with comprehensive responsibility. By September 9th, the report Godart had called for had been written and delivered by Georges Villain, one of the Professors at the Dental School. Godart was so impressed by Villain that he made a personal visit to the School on September 13th. (Augier, 1986; Calicot, 1993)

On February 26th 1916 the War Minister, Joseph Gallieni, asked the President of The French Republic, Raymond Poincaré, to appoint an Army Dentist. Gallieni’s request was successful; in a decree published in the Official Journal on March 3rd, Poincaré announced the formation of a Dental Corps for the duration of the War. Godart specified that the Corps would comprise 1,000 warrant officers whose uniform would be modelled on those of adjutant nurses, bearing a silver caduceus with the addition of a letter ‘D’ 1cm in height. The Corps was affiliated with the Ministries of the Armed Forces and Interior and would be supervised by the Chief Physician of their unit. They wore the armlet, designated by The Geneva Convention which had been signed by the French on 22nd September, 1864 (Riaud, 2008).

In January, 1916, Blatter, the President of the National Dental Federation, (FDN), and Villain, its Secretary, met Admiral Lacaze, the Minister of the Navy, with the intention of creating a Navy Dental Corps. On March 1st, Lacaze delivered a report to the President of the Republic, asking him to create a ‘Naval Dental Surgeon’ (Konieczny, 1992) to which Poincaré immediately agreed. Naval dentists were integrated into the ranks of medical assistants and were to wear the same clothing and badges. As soon as any of these decrees were issued, its implementation became a matter of urgency. The FDN swiftly sent the texts of the documents to dental surgeons. Admiral Lacaze was empowered to recruit dental surgeons to assist the Navy physicians who would supervise dental work. All dentists, who were not officers, were to be assigned to the nursing sections. On June 9th, the ministerial direction on stomatology services, reference #8119 3/7, a charter for dental officers, established the organisation of the surgical and maxillofacial prosthetic rehabilitation units, in the centres for
the edentulous and dental treatment units of the garrison (Augier, 1986; Caliot, 1993).

1916 was also the year that the Inter-Allied Dental Congress was held in Paris. The meetings of this Congress, on the 9th and 13th of November were devoted to teaching demonstrations which focused on the treatment of fractures of the maxilla and mandible. Various branches of the medical services attended the Congress and took part in training sessions on the 14th and 18th of the month. The general meeting was held on the 13th at the Dental School of Paris, Rue de La Tour d’Auvergne (Riaud, 2008). The attending members had the benefit of viewing a comprehensive exhibition, showing various casts, temporary or permanent supportive devices, dental braces, jaw blocking devices and expansion devices in the case of trismus, labial and buccal atresia. The aforementioned, Justin Godart, the Under Secretary of State for the Army Health Service, presided over the formal sitting. George Villain organised the event and received a standing ovation on the final day. (Augier, 1986; Calicot, 1993).

Within a year, despite his heavy work schedule, Villain had published a substantial, two volume illustrated record of the proceedings of the Congress. From 1917 onwards, dental school prosthetic departments provided treatment for ambulatory patients by liaising with military hospitals and stomatology units. On March 10th, Godart decreed that soldiers and non-commissioned officers would receive free orthodontic appliances. A short while later, on April 7th, regimental dentists were established. By the end of the year, a survey confirmed that there were fifty dental officers on the staff. A circular of July 3rd had already stated that from 1st September, these officers would be fully supplied with the materials and equipment which they needed to practise.

On February 8th, 1917, with the goodwill of the organisation, Godart resigned his post with the NDF. He was replaced by Mourier. The following month a bill was passed which increased the number of dental officers still further; it became law on 20th October, 1918. (Riaud, 2008).

From 1914 to 1918, the duration of the War, 88 dentists died on the Front Line; 156 distinctions were awarded to dentists in the same period. (Augier, 1986; Caliot, 1993).

REFERENCES
The First French Book On Dentistry

by

Xavier Riaud

Cardinal Georges d’Armagnac, Bishop of Rodez (1500-1585), French Ambassador to Venice for King Francis I (1494-1547), frequently suffered severe toothache. Although d’Armagnac consulted many practitioners, he could not find relief. As a last resort, he approached Urbain Hémard (c. 1548-c. 1616), a surgeon who had practised in Venice since 1529. Hémard had little knowledge of dentistry but he began to study the subject and its practice in order to assist the Cardinal Ambassador and eventually, he treated his illustrious patient with great success. Georges d’Armagnac was very grateful and encouraged Hémard to continue his research and write a book on teeth. He asked the surgeon if he knew the work of Benoist Rigaud, whose book, “the causes and reasons of such a great pain and the other properties which made the differences between teeth and bones,” which had been published in Lyon, in 1582. Hémard’s own book was eventually called, Recherche de la vraye anathomie des dents, nature et propriété d’icelles (Research on the true anatomy, nature and properties of teeth) and was naturally dedicated to his patron, the Cardinal. This book is considered by specialists as the first work on teeth of its kind in France. It notably inspired Fauchard to write his famous Le Chirurgien-dentiste ou Traité des dents (1728). Hémard remained in the Cardinal’s service from 1552 to 1562. Avicenna, Chauliac, Eustache, Fallope, Joubert, Vésalius and even Ambroise Paré were his sources of inspiration.

Urbain Hémard was born in Entraygues, in Aveyron. Even though most authors have maintained that he was born in 1548, doubts remain concerning this date. After studying in the famous university of Montpellier, the first medical school on French territory, he settled in Rodez. There, Hémard served as lieutenant of the First Surgeon of the king. He was registered as such in the ‘sénéchaussée’ (administrative district) and diocese of Rouergue. In 1589, he went to Aix-la-Chapelle while a major epidemic of plague was raging there. His work to control the disease was outstanding; so much so that he was congratulated by Davin, the king’s personal physician. Hémard reportedly died in 1616, but again, there is no evidence to confirm this.

La Recherche de la vraye anathomie des dents, nature et propriété d’icelles is made up of 23 chapters which are described thus:
1/ He distinguishes the tooth, in its structure, from the bone.
2/ Teeth serve to chew, which is essential for a good digestion.
3/ Teeth lose their whiteness with age and are subject to erosion.
4/ More than a mere sensitivity, he said that teeth were endowed with ‘a sensitivity’, called stupor dentis which cause them to react.
5/ Teeth respond unequally to a broad variety of food stimuli.
6/ If teeth are sensitive, it is the same with bones but the sensitivity of the latter is shorter in duration.
7/ From a philosophical and medical point of view, milk teeth are formed while the child is breastfeeding in what Hémard called a ‘matrice’ (matrix).
8/ When the first milk teeth appear, permanent teeth are formed in the same matrix.
9/ A tooth, which is lost, never forms again.
10/ After the autopsy of a newborn’s jaw, Hémard understood the principle of tooth development or odontogenesis.

11/ Each tooth has a chewing function: incisors cut, molars grind.
12/ The chronology of the eruption of milk teeth is perfectly defined.
13/ The periodontal ligament and its ties with the teeth are well-described.
14/ Illnesses resulting from the eruption of the baby teeth are well-illustrated.
15/ Treatments are considered for diseases associated with eruption.
16/ Illnesses resulting from [the pathology of ] permanent teeth are well-illustrated.
17/ Treatments are considered for the systemic conditions resulting from diseases of permanent teeth.
18/ In situations where the pain does not disappear following the previously mentioned treatments, the techniques used are clearly set out.
19/ This chapter concerns patients who suffer from dental problems but do not suffer anymore when the tooth is about to be …[extracted?]!
20/ Instructions about oral hygiene and treatments in case of periodontal diseases.
21/ Various pieces of advice: prevent, manage or mitigate damage [to the teeth]. Cosmetic advice for ‘beautiful ladies’, advice on venereal diseases that impact on teeth, on transplantation and rejection…
22/ [Prophylactic] Recommendations of substances for chewing and mouth rinses.
23/ Guidelines for sensible eating to protect teeth: brushing one’s teeth, and in order to oreserve the teeth, not crunching food which is too hard and liable to break them…

Conclusion

Even though some parts of Hémard’s work seems to be naive, and certain aspects of his research depended on the superstitious practices and beliefs of his day, Urbain Hémard was ahead of his time. The use of old French makes his book difficult to read. However, his concern for the well-being of his fellow citizens and his determination to find the means to alleviate their pain is obvious.
How is there a difference between the local anaesthetic syringe volume in the UK and USA?

Robin Orchardson replies:

Dr Phillippe Zimet, a dentist from Melbourne, Australia, wrote asking for information. “I am trying to introduce some historical perspectives into my course of endodontics. I wonder if you could direct me to where one would find why there is a difference between the UK 2.2ml syringe and the USA 1.8ml syringe.”

Not knowing the answer, I wrote back to him with a link to the BDA Museum. I also wrote to Dr John Meechan, expert in local anaesthesia. John didn’t know the answer, but said there was no pharmacological reason for the difference in dosage.

My next letter was to Dentsply, who have taken over from Astra-Zeneca in supplying dentists. Mike Hodgkiss replied: “I fear the reason why there is a difference is lost in the mists of time. Here in the UK, and I believe in Australia, we have the 2.2ml cartridges, but in Europe, and the Americas they have 1.8ml. I recall once being told, jokingly, that Europeans and Americans were tougher than the British!”

I asked the Committee of the HNHofDRG as well. Dr Mike Gow said: “When I was in final year in 1999, I won the final year presentation case poster prize sponsored by ESPE in Germany. The prize was a trip to their factory in Seefeld, south of Munich. While there I was given a tour of the factory. When we were watching the production of local anaesthetics, I asked the question: why is the UK (volume) 2.2ml but other countries 1.8ml? The answer that was given was that it was simply the way they had always been made and so that was how the markets now were. A bit like driving on the left or right. Once upon a time the decision was made that it was to be a certain volume. Manufacturers/dentists in one part of the world asked for one volume, and another in another.”

Prof Roger Linden and I were discussing the matter in the summer of 2014, and we wondered if the different measuring systems were the source of the problem. In the UK, there are 20 fluid ounces per pint, but in the USA, there are 16 fluid ounces per pint. Percentage-wise, 16 fluid ounces is 80% of 20 fluid ounces; and 1.8 ml is nearly 81% of 2.2ml. But, when I calculated the cubic centimetres or millilitres, they were the same! So, that didn’t work either.

I was not very happy with the reasons given, so I widened my search to the USA. I didn’t have much success, until I wrote to Dr Stanley Malamed, author of the definitive textbook on the subject of anaesthesia (Handbook of Local Anaesthesia, 6th edition, Mosby Reed Elsevier). He replied much more positively:

“Simple answer. Different countries, different standards. In the USA back in 1922 when Cook-Waite trademarked the name ‘Carpule’ for the glass cartridge, the USA established a standard of 1.8 ml. Other countries, most notably England established a different standard, 2.2 ml. Many countries that were once a part of the British Empire retain the 2.2 ml standard cartridge, while other parts of the world have the 1.8 ml. Many countries today have both. It’s really as simple as that.”

While Dr Malamed does give a reason that answers the question, it does not say how is there a different dosage in different parts of the world? The search goes on.

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From Pat Lilly, Assistant Secretary, HNHDREG.

In response to the article on the early days of women dental practitioners by Rufus M. Ross, entitled, ‘A Monstrous Regiment Of Women?: Attitudes To The Vanguard of Female Dentists’, (DHM: 8:1, pp 7-10), Pat Lilly has contacted us with information on another article which will interest readers who wish to know more about the subject. This is Edwina Kidd’s ‘Dental Suffragettes -Women in Dentistry’ in British Dental Surgery Assistant, May/June, 1978, pp. 46 ff. This is a well researched, highly readable article with many witty observations. Ms Kidd notes that in the reign of the Tudor King, Henry VIII, (1509-1547) there were only two women barber surgeons; one of these, a Mistress Ebbs, was ordered to take down her signboard because she had been found to be ‘an abuser in surgery’. Cleary, practising standards in the Tudor period were higher than one would have thought.
Dental History Magazine Vol. 9 No 1

Web News
by
Carol Parry

Library And Heritage Manager, Royal College Of Physicians and Surgeons Of Glasgow

Painless’ dentistry?
American Edgar Randolph Parker legally changed his name to ‘Painless’ in 1915 so that he could continue to practise after the State of California insisted that dentists work under their legal title. Showman, travelling tooth extractor and ringmaster in his own circus, he claimed to have extracted over 350 teeth in one day. Writer James Bartlett remembers the legacy of Painless Parker in an article in the BBC Magazine at http://www.bbc.co.uk/news/magazine-31704287

A treasure trove of dental history
Parker graduated in dentistry from Temple University, Philadelphia in 1892. The historical dental museum at Kornberg School of Dentistry, Temple University has objects relating to Parker described on its online catalogue at http://temple.pastperfect-online.com/. The objects include two necklaces made out of teeth that Parker used to wear, a bottle of Parker’s dental wash and an advertisement for Painless Parker Tooth Powder. Not surprisingly, Parker was highly controversial in his day – the American Dental Association labelling him “a menace to the dignity of the profession”.

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Ethiopian mandible could mark the dawn of humankind
On 29 January 2013, scientists working in north-eastern Ethiopia’s Afar region discovered a jawbone which might be the earliest ancient human fossil ever found, ‘pushing back the origins of humankind by 500,000 years’. The 2.8 million-year-old mandible and a digital model of a key fossil are revealing secrets about the genus Homo. The teeth are small and the parabolic shape of the bone is a better match to Homo than Australopithecus. Readers who wish to follow this story will find it at: http://www.nature.com/news/ethiopian-jawbone-may-mark-dawn-of-humankind-1.17039

Coffee Conversations
‘Coffee Conversations’ is held on Wednesday mornings in the Library Reading Room, Royal College of Physicians and Surgeons of Glasgow. Please come along at 10.30 am for coffee or tea and a chat before a talk and discussion starting at 11 am. We finish at 12 noon. The topics are an eclectic mix of History, Current Affairs and Literature. All are welcome, especially those with enquiring minds. Please e-mail the Library at library@rcpsg.ac.uk for the current programme.

[Editor’s Note: Our thanks to Mrs Mary Lilly and to Rufus M. Ross for their contribution to this edition of Web News.]
Word Of Mouth

Fifty Shades Of Enamel

Jo Cummins Reviews McTeague by Frank Norris

produce ever widening cracks in the personality which will inevitably expose the human beast within. Frank Norris propounds these ideas by chronicling the natural working of fate and the inevitable disintegration of the lives of a slow-witted, muscle-bound dentist, John ‘Mac’ McTeague, and his delicate but fatally avaricious wife, Trina.

Mac spends his early years in coal-mining country as the child of an abusive alcoholic father. He grows into an exceptionally strong giant-of-a man with a shock of blond, curly hair. His first job is as a car-boy at the Big Dipper Mine where he trundles heavy ore in and out of the tunnels. He is happy enough as a human work horse, docile and prepared to labour so long as he has a warm place to sleep and three good meals a day. However his mother has plans for her son’s upward social mobility so when a quack dentist visits the mine, Mac is persuaded to become his informal apprentice. He observes ‘Painless Potter’s’ procedures, he sharpens his excavators and puts up his notices as Potter moves from camp to camp. Mac does not go to dental college, he gains no diploma but the practical side of dentistry suits him. In a rare moment of reflection he muses that dentistry was not so different from mining because, what were the drills and chucks for mining ore but enormous hoe excavators, hard bits and burrs? Mac heads for San Francisco where he sets up a surgery above a branch post-office in a rooming house on Polk Street. Outside his window, he hangs a modest board:

‘DR McTEAGUE - DENTAL PARLORS - GAS GIVEN’

Although Mac is unimaginative, it is his dream to replace this sign with a huge golden tooth, wrought in German gilt, the best on the market. He describes his practice as, ‘The Parlors’ even though his surgery is a single bed-sit where he must also eat and sleep.

McTeague and Trina

From the film version of McTeague, (re-titled Greed,)
Erich von Stroheim, 1924. Metro-Goldwyn-Mayer

McTeague: A Story of San Francisco by Frank Norris (1870-1902) is the squalid story of a late nineteenth-century, unlicensed dentist. When it was first published in 1899, the novel provoked almost universal opprobrium for its exploration of sadomasochism and its relentlessly, nihilistic view of human nature. More recent reviews have identified its social and religious prejudices: Mexicans, Native Americans, Jews and Catholics are all negative stereotypes; misogyny is taken for granted. McTeague strips life of any higher meaning. It is an essay in Naturalism, which is the philosophy that only physical laws, as opposed to supernatural or spiritual laws, operate in the world. For the naturalist, science is enough to explain all phenomena while metaphysics is meaningless fantasy. Mankind is no more than a vicious animal species which has developed a pitiable veneer of civilisation. According to the naturalist, a scratch in this crust of civilisation, an economic misfortune perhaps or an inherited weakness will
Any ambition Mac nourishes is entirely focused on dentistry: the profession brings order into his life, and, in his pursuit of the golden tooth, perhaps even a dull aesthetic sensitivity.

Frank Norris’ skill as a writer is most apparent in creating atmosphere. His description of Polk Street and its community of small traders, plumbers, cheap restaurants, stationers and dentists has the lyricism of Dylan Thomas in Under Milk Wood. The reader cannot escape the suffocation of Mac’s Parlors. The dentist’s bed-lounge lies against the wall, there is a washstand behind a screen in the corner where he makes his plaster moulds, his second-hand operating chair sits in the bay window with his dental engine and moveable instrument rack. The pungent odours of ether, creosote and stale bedding hang in the greasy heat from an oil stove. Three bargain chairs for waiting patients range against the wall underneath a steel engraving of the court of Lorenzo de Medici, the latter purchased because there were a great many figures in it for the money. A stand of shelves holds the seven volumes of Allen’s Practical Dentist, from which Mac gleans all his knowledge. He is content plugging teeth ‘at two bits an hour’. He keeps a canary in a gilded cage. He is sentimentally attached to this little bird: true to Naturalist Philosophy, the author uses the caged creature as a leitmotif for the hopelessness of the human condition. On Sundays Mac takes his dinner at 2 pm in the car conductors’ coffee joint near his Parlors: this is thick grey soup; heavy underdone meat; two kinds of vegetables and a suet pudding full of strong butter and sugar. Afterwards, he returns to his surgery to smoke his pipe and drink a pitcher of cheap, steam beer. He reads the paper and plays his concertina; always the same six tunes, later he dozes in the dental chair, ‘crop full, stupid and warm’. The dentist has no friends apart from an acquaintance he has struck up with Marcus Schouler, who happens to take his meals in the same diner where Mac lunches. Like nearly all Norris’ characters, Marcus is detestable. He is an unstable, capering individual whose mind teems with jargon. Marcus is either in a lather of excitement or in a calculating huff at some perceived slight; He is dangerously resentful. If the slow, giant McTeague is a rumbling volcano, Marcus is an eruption. Yet the two characters achieve a clumsy male bonding until Marcus introduces Mac to his cousin Trina, to whom he is unofficially engaged. The girl has lost one tooth and loosened another in a fall. Alas, Trina is the catalyst whereby McTeague’s bovine but not unsatisfying way of life descends into violent brutality. Although young women disturb and perplex Mac, ‘his pal’ Marcus persuades him to treat Trina. Again, Norris’ skill in observing detail comes to the fore:

“McTeague put the mirror in her mouth, touching one and another of her teeth with the handle of the excavator. By and by he straightened up and wiped the moisture from the mirror on his coat sleeve.”1
The root of the broken tooth (upper bicuspid) was still in the socket and Mac believes that the loose second bicuspid would also have to be extracted. Trina is distraught by the impending disfigurement and begs the dentist to reconsider. Mac was sure that the remaining bicuspid would not sustain a crown but he grew obstinate, "resolving with all the strength of a crude and primitive man to conquer the difficulty." He embarks on a course of crown and bridge treatment. Norris's description of the prolonged restoration of Trina's dentition is well researched. McTeague's use of upper cowhorn forceps, rubber dam and different types of gold are closely described here, and elsewhere, in the book, such as when he places a gold restoration in an incisor for Miss Baker, an aged resident of his rooming house:

"McTeague remembered now that it was what is called a proximate case, where there is not sufficient room to fill with large pieces of gold. He told himself that he would have to use mats in the filling. He made some dozen of these mats from his tape of non-cohesive gold, cutting it transversely into small pieces that could be inserted edgewise between the teeth and consolidated by packing...he continued with the other kind of gold fillings, such as he would have occasion to use during the week: blocks to be used in large proximal cavities, made by folding the tape on itself a number of times and then shaping it with soldering pliers; cylinders for commencing fillings, which he formed by rolling tape round a broach cutting it afterwards into different lengths. He worked it slowly, mechanically, turning the foil between his fingers with the manual dexterity that one sometimes sees in stupid persons." 2

These and similar passages provide a fascinating record of dental practice in the period. Mac’s interest in Trina develops beyond the professional and the beast within emerges; when he is obliged to administer a general anaesthetic he kisses her full on the mouth while she is unconscious. Eventually they marry but the flaws in their respective characters combine to ruin the couple. Trina’s ingrained avarice runs out of control when she wins a lottery prize of $5,000. Her willing fascination with Mac’s raw, male brutality makes her blind to his stupidity and impending descent into violent alcoholism. When the dentist loses his practice after someone informs the city authorities that he has no diploma, everything that kept the beast in him locked up is destroyed and their fate is sealed. Mac is too ignorant to know that, since he had already been in practice for several years to good repute, an appeal might have resulted in a license to continue in practice. His life spirals down and ends in a kind of dark, merciless justice in the bleached sands of Death Valley.

McTeague is acknowledged as an attempt to bring coarse reality and depth to nineteenth-century American fiction. It is direct, skilful writing without a spare word. Yet it is also a work of despair which views life under a single, murky optic in which every character is defined and held hostage by their own weaknesses. There is ample reason to believe that human nature is infinitely more complex.

References
   I am indebted to Professor David McGowan, HNHDRG, for his confirmation that upper cowhorn forceps are listed in the 1899 Claudius Ash Instrument Catalogue.
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**Editor’s Note:** Please contact our secretary if your name has been omitted from this list. The overland postal address and e-mail details are on Page 3.
The badge originated in 1931 as that of the Glasgow Dental Students’ Society and later, by common usage, came to be regarded as the official badge of the Hospital and School. When the new dental hospital was opened in 1931, an ad hoc Committee of the Dental Students’ Society was formed with a brief to design a blazer, tie and badge as befitting the dignity and splendour of the new hospital which, at that time, was considered the most modern and up-to-date in the country. The Committee comprised the honorary visiting surgeon Mr Thomas G. Scott of Glasgow as advisor and four senior students, William Dykes and George G. Thomson of Motherwell, Henry E. Gray of Glasgow and James S. Prentice of Clackmannanshire.

Suggestions and designs were made and discussed until the final one emerged, which met with general approval and was adopted. The badge is described as follows:

A painted shield, divided by a white chevron edged with black, the upper field red and the lower green. On the upper field, in gold, are the Coat of Arms of the City of Glasgow and the motif, Two Lions Combatant supporting the rod of Aesculapius, from the Coat of Arms of the British Dental Association. On the green field, also in gold, the figure of St Apollonia, the patron saint of sufferers from toothache, bearing a branch of palms. Beneath on the scroll, the motto Labore et Scientia, freely translated as ‘By Work And Knowledge’

A blazer and a tie of navy blue were chosen, with the badge mounted on the breast pocket and reproduced in miniature on the tie. The commission for their production was given to R. W. Forsyth of Glasgow, athletic outfitters.