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The History of Dentistry

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Dental Historian

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Editorial

In the year 2015 there seem to be many anniversaries. In the last edition of the Dental Historian I reported the 200th anniversary of the birth of Sir John Tomes. In this edition I would like to mention the 80th anniversary of the British Dental Association Museum. Anyone who has had cause to contact the museum staff with a question or for advice will know what an invaluable resource the museum and library staff and volunteers provide. At the recent BDA Conference in Manchester the Museum had a superb display, commemorating all the important moments of dental history, for example; the discovery of x rays, anaesthesia, vulcanite etc.

Conference delegates who visited the stand were asked, "If you were in your surgery,



what equipment or material could you not manage without?" Interestingly the most popular responses were for loupes, local anaesthetic, composite resins and bonding materials.

A treadle drill from the museum was available and young dentists visiting the stand discovered what physically demanding work was involved in preparing a cavity.

The Lindsay Memorial Lecture at the BDA Conference was given by Mr. Simon Gambold from Henry Schein. He traced the history of the dental manufacturing industry and described how the dental industry has worked alongside dentistry for the better treatment of our patients. He illustrated his presentation with



images showing how dental materials and instruments were formerly hand made in a labour intensive system and compared that with the modern manufacturing processes.

I would like to thank Mr. Gambold for giving this most interesting lecture and also Henry Schein for supporting our dental history.

Another anniversary this year is the final meeting of the LV Society. This group of dentists graduating from Manchester in 1955 has met every year for the last 60 years. The meeting was also generously supported by Henry Schein.

Finally I have included information about a very special acquisition by the BDA museum. The donation is a beautifully illustrated book, recording a testimonial to a most remarkable dentist, William Henry Waite. The book contains hand written letters from prominent 19th Century dentists including several from Sir John Tomes and his son, Sir Charles Tomes. A visit to the BDA museum to see this book is recommended.

Corrections

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The Silver Bauhinia Star was awarded by the Government of the Hong Kong Special Administrative Region.

Obituary of Margaret Murray, MBE. 1921-2015

Rachel Bairsto

We are sad to report the death of Margaret Murray. Margaret was orphaned at 10 years old and was looked after by her many aunts, one of whom was Lilian Lindsay (Aunt Lil).



Fig.1 The Murray family including Margaret Murray's aunts. Far right Lillian Murray sitting on Uncle Frank's knee.

Margaret shared some of her reminiscences of Aunt Lil at the unveiling of the blue plaque to Lilian Lindsay. 'I have such fond memories of 23 Russell Square (the former headquarters of the British Dental Association and above which Robert and Lillian Lindsay had a flat). The stairs were numerous but rather shallow, and she Lillian Lindsay) used to trip up, and particularly down them at such great speed! I loved the atmosphere of the Library and when I visited she would always give me simple, useful things that a child could do there: sorting things in alphabetical order, sticking on postage stamps for a mass mailing, looking for dental surgeons in the London telephone directories'.

Margaret was delighted to attend the unveiling of Lilian Lindsay's blue plaque as part of the English Heritage scheme in 2012. It had been quite by chance that Lilian's great great niece Edwina Brugge had been in touch with the museum researching the Murray family tree and tracked down Margaret Murray and put us all in touch with each other.

Music was the foundation of Margaret's life and she dedicated her life to music education. When she was a student at the Royal College of Music, Lilian Lindsay housed Margaret's baby grand piano in her flat in Putney where Margaret spent many hours practising.

However, Margaret recalled Aunt Lil covering the piano with carpet in an effort to muffle the sound.



Fig. 2 Margaret Murray following the unveiling of the Blue Plaque to Lilian Lindsay

At the unveiling of the Blue Plaque event, Margaret generously donated to the medals of Robert Lindsay to the museum. These were the medals he was awarded whilst a dental student at Edinburgh Dental School.



Fig.3 Student medals for chemistry and physiology awarded to Robert Lindsay from Edinburgh University, presented by Margaret Murray to the BDA Museum.

In 2014 Margaret was awarded an MBE for services to music and will be particularly remembered for being a founding member of the Orff Society and introducing its teaching methods to the UK. Numerous tributes to her work of nurturing creativity through music have been reported from countries across the world. Margaret Murray was a remarkable lady who will be sadly missed.

Unlocking the past: The role of dental analysis in archaeology

Roger Forshaw

Abstract

What can the study of ancient teeth tell us about the life style and dietary habits of our ancestors? Dental palaeopathology is particularly important as it can provide direct evidence of the type of diet an individual consumed during life. An analysis of the angle of tooth wear evident on the crown of the tooth can help to distinguish between early hunter-gatherers and later agriculturists, whilst microwear features on the occlusal surface can help to discern subtle dietary shifts. The distributions of stable isotopes in food webs make it possible to use them to reconstruct ancient diets as well as tracing the geographic origins and migrations of peoples. Plant microfossils have been isolated from calculus which can be identified using light microscopy. Teeth are particularly useful in ancient DNA studies due to the excellent preservation of biomaterials within the enamel shell of the tooth.

Key Words

Dental palaeopathology, caries, calculus, enamel hypoplasia, tooth wear, stable isotopes, ancient DNA

Introduction

Teeth are not only the most highly mineralised tissue in the body but they are also the hardest and most chemically stable, usually surviving long after their supporting structures have deteriorated. In contrast to bone teeth interact directly with the environment during mastication, and as a result can provide information about the diet and health of a deceased individual during life. Whilst bones may well suffer post-decomposition over time, teeth are usually sufficiently well-preserved to allow visual and scientific analysis. Analytical techniques that are now available to unlock information from teeth, relating to the life-style of our ancestors, are wide-ranging and continually expanding. Dental palaeopathology, however, is fundamental to any study of ancient teeth as it provides direct evidence of the type of diet that an individual consumed during life.

Dental Palaeopathology

Caries

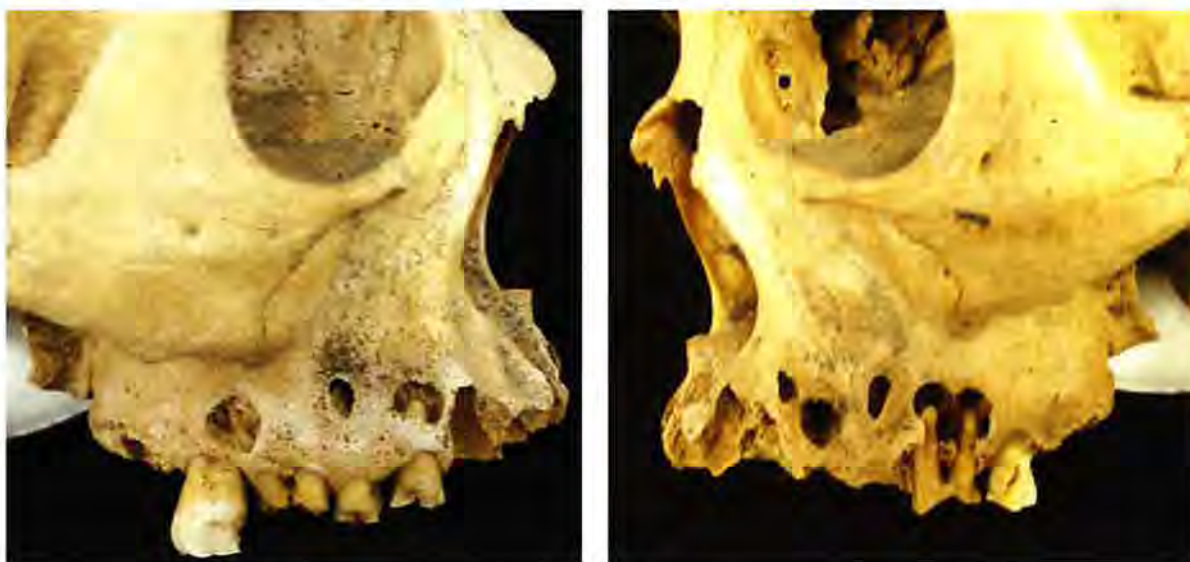
Dental caries can be an important indicator of dietary variations between different historical populations. The disease can be traced far back in geological time and to all parts of the

world, but early humans were less affected by caries than modern populations. This can be illustrated by considering the ancient Egyptian population. In the Neolithic Period when the ancient Egyptians were predominately hunter-gathers, they consumed a diet rich in protein with few simple carbohydrates and as a result had little caries experience. After 4,000 BC society developed into a sedentary agricultural lifestyle with bread being the staple food, but as the variety of bread consumed was composed primarily of complex non-fermentable carbohydrates, caries was still fairly negligible. However, with the arrival of the Greeks into Egypt in the 4th century BC, foodstuffs such as fine white bread, honey and dates became more freely available and caries incidence rose significantly.¹

A dramatic difference in caries experience within a population, separated by only a short space of time, is illustrated by considering the example of the Inuit who inhabit Canada, Greenland and Alaska. Up to the early part of the 20th century the Inuit consumed primarily a high protein and fat diet consisting of seal, caribou, fish and walrus, a diet that resulted in less than one cavity per individual being recorded. However, with increasing contact with the North American and Canadian cultures the diet increasingly became one of purchased foods from trading posts, foodstuffs that included high levels of refined carbohydrates. This rapid change of diet which occurred within a single generation resulted in figures of between eight and fifteen cavities per individual being noted.^{2,3}

Periapical Cavities

Severe tooth wear, gross caries and trauma can precipitate pulpal necrosis which results in the release of bacteria and their toxic products into the periapical tissues. Such an incursion would elicit an inflammatory response, the level of which would depend on the balance between the immunity of the host and the virulence of the infection. Low-grade infection is likely to result in a chronic inflammation response, the most common reaction being a periapical granuloma which would create a void in the surrounding bone. Over time this may develop into an apical periodontal cyst. Such periapical cavities are useful dietary indicators and it is not uncommon to observe multiple periapical cavities in a single specimen (Figures 1a and 1b).



1a

1b

Figs. 1a and b: Right and left lateral views demonstrating multiple periapical cavities above the roots of the maxillary teeth.
Unprovenanced skull from ancient Nubia.
(Courtesy of the Duckworth Collection, the University of Cambridge)

However, if the pulp were to be infected by a virulent strain of bacteria then an acute abscess would develop. Such an abscess rapidly invades the alveolar intertrabecular spaces and vascular channels but does not form a bony cavity because of insufficient time for osteoclastic resorption to occur. Pus tracks through bone taking the path of least resistance until it reaches an outer surface where it would discharge, except in rare cases where the rapid extension of the infection to adjacent bone marrow spaces could produce osteomyelitis.⁴

As mentioned above a factor in the progression of these infections is host resistance or its impairment by systemic disease and this might have been a significant factor in antiquity. Many of our ancestors may well have been debilitated by chronic diseases such as tuberculosis or various parasitic infections, diseases which today are treatable. In such compromised individuals or where the virulence of the infecting agent is high, then serious complications may ensue. Bacteraemia could result which if untreated, as it would have been in antiquity, could progress to generalised septicaemia and be fatal.⁵

In the historical record, the potential for an abscess to spread causing severe sepsis and death has long been recognised.⁶ In the early 1600's the London Bills of Mortality frequently listed

'teeth' as the fifth or sixth leading cause of death.⁷ DeWitte and Bekvalac⁸ examined skeletal remains dating from AD 1350-1538 excavated from a medieval London cemetery and their findings indicated that oral pathologies were associated with an elevated risk of mortality. Even by the turn of the 20th century dental infections were still associated with a significant risk of death. A study by Thomas⁹ determined a death rate of between 10 and 40 per cent of those admitted to hospital with dental infections.

Periodontal Disease

Whilst the diagnosis of periodontal disease in the dental surgery is usually straightforward, detecting periodontal disease in skeletal material, without the presence of the soft tissues, can be problematic. An increase in the distance between the cemento-enamel junction and the alveolar crest, inaccurately used as an indicator of periodontal disease in the past, has often been shown to be due to continuous eruption as a result of tooth wear. Identification of periodontal disease in skeletal material needs to be based on characteristics such as altered shape of the alveolar margin and the presence of macroscopic porosity on the alveolar bone caused by resorption of the cortical plate which reveals the underlying porous cancellous structure.^{10,11}

Using criteria such as these studies indicate that in ancient populations periodontal disease involving horizontal loss of alveolar crestal bone loss was not common and if it did exist was usually of minor severity in comparison to modern populations.^{12,13,14} Clarke and Carey¹⁵ suggested that this may be due to more effective host defence systems functioning within the gingival crevice and gingivae compared to modern populations where these systems may be compromised by persistent or combined environmental factors such as smoking, diet and unhealthy life-style options.

Ante-mortem tooth loss (AMTL)

The loss of teeth prior to an individual's death is recognisable by progressive resorption of the alveolar bone. Differential diagnosis of the aetiology of AMTL may yield important information regarding patterns of behaviour in ancient peoples. Excessive tooth wear, caries periodontal disease, traumatic injury and dental ablation for aesthetic or ritual reasons are significant precipitating factors. Also generalised conditions such as nutritional deficiency disorders may contribute to the frequency of AMTL.¹⁶

Calculus

Calculus, being highly mineralised, survives well in the archaeological context and an analysis of calculus can be useful in furthering our understanding of ancient lifestyles. Calculus formation is facilitated by an alkaline oral environment and diets high in protein increase this alkalinity thus contributing to the formation of calculus. However, many other factors such as individual variation, cultural practices, the degree of mineral content in the drinking water, presence of silicon and bacterial involvement in the mineralisation process are all factors which would affect the deposition of calculus.¹⁷ The presence of large quantities of calculus on ancient teeth is by itself not necessarily an indicator of specific dietary patterns but does supply evidence that may assist in determining such patterns.

During the process of calculus formation food particles and plant microfossils are trapped within the calcium phosphate matrix, an environment in which they are well-protected. A sample of this calculus can be chemically treated to release these microfossils. These are then identifiable by means of light microscopy and are able to provide a direct record of particular plants consumed during life.¹⁸

As to be described below stable isotope analysis is an important technique in the construction of past subsistence practices. However, it is a destructive procedure as rare archaeological specimens have to be physically sampled which inevitably would result in damage to the specimen. Scott and Poulson¹⁹ describe a new technique in which calculus is analysed for carbon and nitrogen isotope concentrations. The results of this study compare favourably with those obtained from other biomaterials such as bone, collagen and teeth. As calculus is a secondary biomaterial and not an integral part of the skeleton, this technique has the potential to overcome curatorial concerns regarding sample preservation.

Enamel Hypoplasia

Enamel hypoplasia is a quantitative defect of enamel commonly occurring as discrete pitting or horizontal furrows on the tooth surface. The hypoplasia is due to a disruption in the secretion of enamel during crown development, resulting in incomplete or defective formation of the enamel crown matrix. Some hypoplasias are related to inherited conditions, but generally these are rare with the majority of defects being caused by environmental stressors such as disease and poor nutrition.²⁰ The distance of the hypoplastic disturbance from the cemento-enamel junction is an indicator of the age at which the disruption occurred. Because enamel is a non-vital tissue such defects are never erased from the tooth and enamel hypoplastic lesions provide a 'memory' of biological disruptions during childhood.²¹

The prevalence of enamel hypoplasia in ancient teeth has been used by Starling and Stock²² to study the transition from a nomadic foraging lifestyle to a sedentary agricultural regime. The dentitions of five populations who inhabited the Nile valley in Egypt, spanning the period 13,000-1,500 BC, were studied. The results of the research indicated that the frequency of hypoplasias was significantly higher in a proto-agriculturist population dating c. 5,000-4,000 BC than amongst early hunter-gatherers, and also higher than among later populations. This suggests that the period surrounding the emergence of early agriculture in the Nile valley was associated with high stress and poor health. However, the health of the agriculturists improved substantially following increased urbanisation and trade that accompanied the formation of the Egyptian state. This development resulted in more guaranteed food supplies, improved health and a reduction in the incidence of hypoplasias.

Tooth Wear

All dentitions display evidence of some loss of tooth tissue due to physiological wear but the tooth wear frequently observed in ancient populations is far more extensive than is evident in modern society today and is often considered as pathological in nature.^{23,24} This excessive wear was mainly due to the hard fibrous foods consumed by our ancestors, foodstuffs frequently contaminated by inorganic abrasive particles. These contaminants would have arrived from a number of sources such as the use of flint-tooth sickle harvesting tools, the ingress of particles from the soil which had not been sieved out and mineral fragments from soft sandstone implements used to grind the grain.²⁵

Excessive tooth wear, therefore, is an indication of the type of diet consumed by an individual, but the pattern of this wear can also provide additional dietary information. Historically, the teeth of both the early hunter-gatherers and the later agriculturists are characterised by rapid pronounced tooth wear, but it is the angle of crown wear rather than the absolute degree of wear that can help to distinguish between these groups. This variation is related to the major differences in subsistence and food preparation. Hunter-gatherers develop flatter molar wear due to the mastication of tough fibrous food where the teeth do not often make contact during mastication. However, with the prepared food of the agriculturist which comprises ground grain and food cooked in water, the teeth are in contact for longer periods. Mastication in this case involves grinding and sliding of the teeth against each other, a process which results in oblique tooth wear.^{26,27}

Not only does the angle of the tooth wear provide information but studies into microwear features observable on the tooth surface can also yield additional dietary evidence. Dental microwear is the name given to the pits and scratches that form on the surface of enamel during mastication (Figures 2 and 3). They differ according to diet and so examining and recognising these traits can be useful in establishing past dietary patterns. Pits are caused when hard abrasive particles are driven or compressed into the enamel surface of the tooth. This process results in cracks in the crystalline structure of the enamel and as a consequence minute fragments fracture away from the tooth surface.

Fig 2

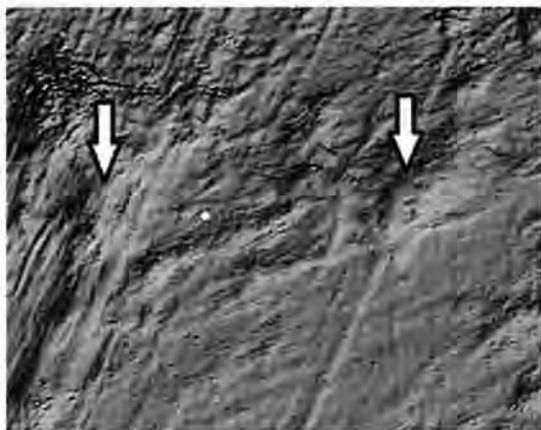


Fig. 2: Photo-simulation of microwear showing pits and scratches.
Late Archaic Period individual, Indiana, USA.
(Arrows indicate pits. Courtesy of M. Zolnierz, University of Arkansas and C. Schmidt, University of Indianapolis)

Scratches occur when particles are dragged between opposing enamel surfaces as the jaw moves through the chewing cycle.²⁸

Fig 3

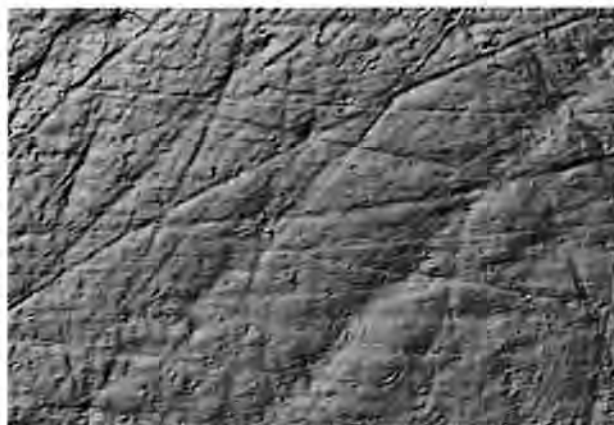


Fig. 3: Photo-simulation of microwear showing scratches.
Early Late Archaic Period individual, Indiana, USA.
(Courtesy of M. Zolnierz, University of Arkansas and C. Schmidt, University of Indianapolis)

The technique of dental microwear analysis involves a statistical evaluation of the wear facets of molar teeth, mainly the cusp tips which are used primarily for crushing and the patterns on the cuspal slopes which are used for shearing. This procedure originally involved using an electron microscope to scan replicas of the wear facets and then identifying the individual features.²⁹ However, such a technique is limited by observer error and a high cost in time and money. A more recent approach is that of dental microwear texture analysis which utilises a white light confocal microscope to examine the tooth surface. This method permits the collection of true 3D surface data which is then analysed spatially in a geometric technique known as scale-sensitive fractal analysis.³⁰

The results of the technique indicate that individuals eating harder foods requiring greater masticatory forces tend to have a greater number of and larger pits, whilst those eating softer foods tend to have mainly scratches. However, these traits are not mutually exclusive and occlusal surfaces usually show evidence of both pits and scratches. Dietary patterns are determined by which microwear features are dominant in a particular population.³¹

Stable Isotopes

Stable isotope analysis is a technique that is useful in the reconstruction of ancient diets, in tracing the geographic origins and migrations of peoples and also in studying human weaning history. Carbon, nitrogen, oxygen and strontium isotopes are those commonly studied whilst collagen extracted from bone or dentine is the structural protein analysed. Teeth are particularly useful because of the excellent preservation of biogenic elements in the tooth structure and their resistance to diagenesis.

Stable isotopes of carbon are the most widely used palaeodietary tracer and the technique utilises the carbon content of carbon dioxide in the atmosphere which occurs primarily in the two isotopically stable forms of ^{13}C and ^{12}C . Isotopes of carbon are universal in the structure of plants and animals but the level of ^{13}C and ^{12}C varies between different groups of animals and plants. Carbon diffuses into the pores of plants as carbon dioxide during photosynthesis with differing groups of plants obtaining carbon from the carbon dioxide in different ways. The C3 photosynthetic pathway, in which the first product of photosynthesis is a 3-carbon compound, is used by most temperate zone vegetation. Tropical and sub-tropical grasses, which include the domestic crops sorghum, millets, maize and sugar-cane, employ what is known as the C4 pathway, in which carbon is fixed initially into a 4-carbon compound.³²

Different plant groups are, therefore, incorporating differing amounts of carbon isotopes into their plant tissue and the two plant groups are quite distinctive and do not overlap. When these plants are consumed the carbon isotopes they contain are incorporated into the hydroxyapatite of bones and teeth in differing amounts. The main component of the diet is then able to be identified by quantifying the relative amount of each isotope within the hydroxyapatite, using the technique of mass spectrometry.³³

This technique has been used to demonstrate the increasing importance at that time of rice over millet in a late Neolithic site in Shandong, China.³⁴ Dupras and Tocheri³⁵ have been able to reconstruct infant weaning histories using stable isotope analysis of the dentition, whilst stable isotope ratios of carbon and oxygen have helped in understanding Neolithic subsistence patterns in northern Borneo.³⁶

Strontium and oxygen isotope ratios in hydroxyapatite have been used to study the geographical origins and movements of ancient peoples. Strontium isotope ratios vary in different types of rock and soil and as a result there are differences in isotopic ratios in plants and animals living in regions with different geology.

DNA

DNA is the genetic material of living cells and the information it contains controls the structure, development and metabolism of the body. The recovery of this genetic material from skeletal tissues has become a central research tool in many scientific fields. There are a number of anthropological questions that can potentially be addressed by DNA analysis such as the determination of sex when conventional identification methods are impossible as well as the origin, relationships and movements of human populations.³⁷ Merriwether *et al.*³⁸ obtained DNA from teeth and bones in order to study ancient migrations to the New World. Haak *et al.*³⁹ examining remains from 4,600 year old graves near Eulau, Germany were able to detect child-parent relationships. Papagrigorakis *et al.*⁴⁰ investigated a mass burial pit, at Kerameikos near Athens dating back to the time of the Plague of Athens (c. 430 BC). Through DNA examination of pulp obtained from teeth excavated at this site these researchers were able to detect *Salmonella enterica serovar Typhi*, therefore establishing that typhoid fever was the probable cause of the plague, a scenario that had only been speculated upon previously.

Although there are smaller amounts of cellular DNA in teeth compared to bone, teeth are commonly used as the outer acellular enamel protects the dentine from environmental

deterioration.⁴¹ Many methods used by molecular researchers such as sectioning, crushing or grinding destroy the morphological structure of teeth and therefore cause curatorial concerns with both anthropologists and museum curators. However, Alakoç and Aka⁴² describe a method for obtaining DNA from an ancient molar tooth in which an entrance cavity is prepared in the occlusal surface of the tooth which is then extended into the pulp chamber. Pulpal and dentinal tissue is removed by the use of K-files and the tooth restored with a composite filling. A sample is therefore obtained for DNA analysis but the physical structure of the tooth is re-established and a rare archaeological specimen is protected from being destroyed.

Multiple Techniques

Increasingly, teeth are being analysed by multiple scientific techniques. Lillie and Richards⁴³ used both dental palaeopathological evidence and stable isotope analysis to help understand diet in the transition from the Mesolithic to the Neolithic periods in the Ukraine. Hogue and Melsheimer⁴⁴ utilised both stable isotope analysis and dental microwear analysis to observe dietary changes over time in east-central Mississippi. Cagnon *et al.*⁴⁵ analysed oral health indicators and microfossils found in calculus to track changes in the habit of coca chewing in South America.

Conclusion

Whereas studies based upon caries, alveolar resorption, rates of tooth wear and other skeletal features can provide a general view of diet, the application of more advanced scientific techniques can be more specific in their findings. These techniques form an essential part of archaeological and anthropological investigations since a comprehensive visual and scientific analysis of ancient teeth can provide information that might otherwise not be retrievable from the archaeological record and which may help with a better understanding of earlier populations.

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Ron Gain and his dental practice before and during the Second World War.

Peter M Frost

Abstract: A history of Ronald Gain's dental practice is described including his service during the Second World War. An account is given of the bomb damage in and around the practice in Peckham Rye.

Key words: World War 2, Dental Practice in Peckham Rye, Guy's Hospital

Introduction.

This is a paper describing the life and times of Ronald D Gain, (Ron) who was a highly respected dental surgeon practicing briefly at 182 and then at 178 Peckham Rye, London. Ron was also a consultant in prosthetics at Guy's Hospital Dental School. The author took over Ron's dental practice in 1969 and still lives in the house, although the dental practice has since been de-commissioned (Fig 1).



Fig 1. 178 Peckham Rye, London.

Early years

Ron was born on April 28th 1904. He qualified LDS at Guy's Dental Hospital in July 1925 at the age of 21 years. He began his dental career in Peckham Rye, south east London which is on the fringe of the common and park. He rented number 180 Peckham Rye for his home and the mirror image flat in 182 for his dental practice, his penultimate address. It was more

common in those days for dentists to set up the practice in the house where they lived. In 1926 he bought the first X-ray machine south of the river Thames. In 1936 the family moved into 178 Peckham Rye, that was Ron, Connie his wife and sons Robin and Martin. Robin became a doctor and Martin a dentist, briefly practising at 178 with his wife Frances, also a Guy's graduate.

The practice

Number 178 Peckham Rye is a semi-detached four storey house built in 1868. It is in a conservation area called the "The Gardens". The site had previously been occupied by market gardens and, at that time, Homestall farm was about a quarter of a mile away. East Dulwich was a sleepy part of the county of Surrey and in the 1930s it was part of the Borough of Camberwell within the London County Council. The smaller boroughs were very proud of their heritage and some of the garden estates built in the 1930s are still admired.

There was a darkroom beneath the staircase on the ground floor and two surgeries, One and Two, with a waiting room on the first floor. Ron, and briefly Martin for 18 months, occupied these surgeries. Within the extension at the back of the house on the ground floor there was the plaster and casting room. This was linked originally by an outside wooden staircase, latterly a step ladder to the first floor where the wax work and ceramics were produced. At the start of the NHS, such was the demand for dentures that Ron employed four full time dental technicians. Eighty per cent of the population over the age of eighteen were edentulous, and many had no dentures.

Pre Second World War

Prior to the Second World War Ron worked at King's College Dental Hospital, virtually from qualifying in 1925. Initially he was unpaid, carrying out emergency extractions and giving general anaesthetics (GAs). Later he was paid about one shilling an hour. He perfected his skills in the extraction of teeth and giving GAs.

At the time of the Munich crisis in 1938 he volunteered for service in the RAF and so was called up abruptly on September 1st 1939, two days before we declared war on Germany. As he was 35 years of age at that time, he was and too old for conscription.

Second World War

Joining the forces had severe economic consequences. His income was halved from £1000 per annum. Previously the family had a live-in maid on 10 shillings (50p) a week, and her keep. On demobilisation in 1945, until the start of the NHS in 1947, finances were bad. Ron served two years at RAF North Luffenham and also Cottesmore in Rutland, bomber stations which flew Wellington bombers. He used to cycle between these two stations which were about 5 miles apart. The family lived in a rented cottage in the little hamlet of Upper Hambledon about 300yds from the famous Hambleton Hall. In 1941 he was posted to RAF Henlow (Fig 2) in Bedfordshire where he was Senior Dental Officer and had a staff of about 200.



Fig 2. Ron Gain at RAF

Henlow 1941. Aged 37 years

The family lived in Hitchin and Ron was promoted to Squadron Leader. Henlow was an initial entry station where a large proportion of new recruits would have been sent to for kitting out; therefore it would have been busy. Several of his Dental Officers went on to the staff at Guy's, amongst whom was the late Professor Cawson, a legend in the discipline of Oral Medicine. Some weeks after D day, June 1944, after the allies advanced across Europe it became apparent that a large number of service personnel, who had been prisoners of war (POWs) in Germany, would soon be released. These men had been poorly nourished and their medical and dental health was not good.

Treatment of soldiers and returning POWs

Instructions were issued to prepare facilities to treat the former POWs medical and dental needs. Ron designed and organised a large number of caravans to be fitted out as dental surgeries at RAF Halton. When the repatriated POWs started to arrive they were seen first thing in the morning by the dental staff. A group had lost a number their teeth but some were almost edentulous due to malnutrition in the last year of the war as Germany collapsed. Those who needed dentures had impressions taken and then they went off for medical assessment for most of the day. At the end of the same day many returned to the dental unit where their new partial dentures were fitted. With complete dentures, other stages in their construction were necessary. It is important to remember that at this stage, before the start of the NHS, there had been much national dental neglect in the civilian population

A return to Peckham and the subsequent bomb damage

Meanwhile the young family, Connie, Ron's wife, Robin and Martin their sons and grandmother had been evacuated to Hitchin in Hertfordshire. In 1944 they felt that the war was nearly over and the family came back to 178 Peckham Rye. However, the V-1 and V-2 rocket onslaught was about to start. Connie slept under the dining room table, Robin slept under the bench in the dark room, which was the cupboard under the stairs on the ground floor. Martin slept on the bench which was a disused door, grandmother slept in a chair under the stairs just around the corner. This area was the safest place in the house as they didn't have an Anderson or a Morrison shelter. The nearest public shelter was a "lean to" against a house wall about 50 metres away. At this time a parachute bomb landed about 200 metres

away on the King's Arms pub, causing considerable loss of life. At the nearby florists one lady was killed outright and had all her clothing blown off, the other sister was unharmed. Additionally two V-1 flying bombs (doodle bugs) landed within 100m of the first large bomb. These explosions took off the front door, broke every window in the house and brought down several ceilings. Later that morning, Ron who was on leave, walked down with Robin to look at the damage. The bomb had landed in the middle of the road producing a shallow crater and tearing up some of the tram lines. As they walked back they heard another doodlebug approaching so they took cover on the ground behind the wall of the nearby Red Cross Headquarters. On another occasion, Martin was standing on the front lawn watching a doodle-bug fly over; the engine cut out and with a strong head wind it turned back towards the Rye, started dipping, at which stage Martin shot in through the front windows (no glass), and it hit the top floor of a an old four storeyed corset factory that had been converted to make parachutes, on the corner of Nunhead Lane. All the machinery fell down through the floors and crushed 80 factory girls who were taking shelter in the basement. A man who was walking on the other side of the road was blown straight up the front path of 178, and was very shocked. The explosion broke any windows that hadn't already been broken on the first occasion. It also brought down more ceilings at the front of the house but more importantly long shards of glass fell down and stuck upright in the lawn where Martin had been standing a few moments before. Ron went back on duty and later he opened the large dental units as the POWs were liberated. The family went back to Hitchin again until the danger had passed and the building had been repaired.

Blasts from exploding bombs travelled in waves. From my personal experience in Ashford, Kent; a bomb could fall behind the house resulting in the front windows being blown out. The damage to windows also resulted in the production of shards of glass. In Ashford all the window surfaces were covered in strips of sticky paper to prevent the glass from fragmenting. The original replacement glass was of poor quality with distortion of the glass. Some of this glass is still in- situ at 178. Also at Ashford we had an Anderson shelter which the Gains didn't have. Some people who had no back gardens had the Morrison shelter which was placed inside the building.

A bomb map showing places where bombs and doodlebugs fell in and around Peckham Rye Common can be accessed at the National Archive.

Post war years

The family had returned to Hitchin and lived with their next door neighbours until grandmother found another house. Ron then spent a brief spell at East Grinstead Hospital with the famous group of surgeons led by Archie McIndoe and William Kelsey-Fry. Kelsey-Fry was a civilian consultant who advised Ron to apply for a demonstrator's post at Guy's Hospital. Fig 3.

I still have a patient who was shot down and lost his legs and was part of the "guinea pig club" at East Grinstead and who had traces of the Black's Copper Cement which was used for the silver cap splints. Many of the airmen were being treated for burns and gunshot wounds

to the face and palate, leaving them with palatal defects. This brought about Ron's interest in congenital and acquired palatal defects, post oncology and trauma surgery and reconstruction in which he specialised at Guy's. One of Ron's great skills was to encourage the patients to start talking again. This treatment was pioneering as this type of rehabilitation had not previously been attempted.

Ron sold the practice and house to me in August 1969 and moved to Ewell. He retired from clinical practice and teaching when Guy's Tower had been completed in 1972. He died on April 14th 1982 in Epsom Hospital of a myocardial infarction two weeks short of his 78th birthday.



Fig 3. Ron Gain 1968, aged 64 years.

Equipment in the dental practice

The laboratory at the practice was re-built in the early 1950s by Bill White during the brief time he was employed as a technician. Bill eventually was appointed to the chief technician post at the Royal Dental Hospital. On the second floor was Surgery Three which was briefly occupied by Frances. Next door to the surgery was a potential space which could have been made into a surgery. We called it Surgery Four and used it for storage of dental stock.

The equipment in Ron's surgery was state of the art bought in the mid-1950s. The equipment in the other surgeries was second hand, acquired here and there. In Surgery Three, the chair dated back to the 1920s and the operating light in 1969 was an Anglepoise lamp.

Prior to the introduction of air turbine, all treatment was performed with the patient in the seated position and the operator standing up. General anaesthetics were provided for dental extractions up until about 1974. In the early years while Ron and I worked together, I acted as anaesthetist and Ron extracted the teeth. We had no adjuvants just oxygen and nitrous oxide

gases. When general anaesthetics were no longer provided in the practice, the anaesthetic equipment was donated to the St Bartholomew's Hospital Anaesthetic Museum

In Surgery Three there was a dental cabinet that had been commissioned by Ron from a cabinet maker who was an antique dealer in East Dulwich Road. When I took over the dental practice this surgery was converted for use of a dental hygienist. I had remembered that there was a hidden compartment in the back of the cabinet which, over the intervening years had been forgotten. Concealed inside the hidden compartment were discovered the practice accounts dating back to 1934.

During the conversion of the dental practice back into a residence, shared by my wife and myself, much of the equipment was either sold off or donated to the BDA museum. Some items, including the cabinet, were bought by a restaurateur.

Practice accounts

The concealed compartment in the dental cabinet contained all the accountant's "Profit and Loss Accounts", in the form of a documents dating from 1934 to 1958. The only missing documents relate to the time when Ron was in the RAF from 1940 to 1945.

The accounts were presented in a form that was standard in 1934 (Fig 5). Ron earned a third of his income as a part time consultant. The profit was £538.

In 1958, (Fig 6) the profit was £2610. As a National Service "*other rank*", I earned £78 a year so I could only afford to visit the NAAFI once a week as a treat. In 1959, when discharged, I earned £12 a week (£624 a year) as a technician.

Using a converter the profit in 1934 was £31,204 and in 1958 the profit was £49,590 both in today's terms. The Retail Price Index (RPI) is the lowest indicator. Using average earnings the two figures would be £90,384 and £122,148. It is likely that the RPI is the fairest way of calculating these totals. Martin was told by his father, that his first year's profit in practice in 1926 was £129.

Figure 5. **Profit and Loss Account 1934**

<u>Expenses</u>	£	<u>Receipts</u>	
Rent	90 - 0	Fees received	673 - 18
Electricity	10 - 10	Income as clinic consultant	352 - 10
Telephone	14 - 11	(this was at King's on Wednesday mornings only)	
Purchases	105 - 8		
Wages	182 - 10		
Professional fees	28 - 10		
Repairs	4 - 14		
Insurance	3 - 3		
Bank charges	2 - 4		
Sundry expenses	46 - 8		
Balance being net profit	538 .6	Total	£1026 - 8

Fig 6. Profit and Loss account 1958

<u>Expenses.</u>	<u>£</u>	<u>Receipts.</u>	
Net Schedule A	66 – 5	Fees received	4,721 – 7
Rates	62 – 16	Hospital fees	918 – 1
	129 – 1		
Less 50%	64 – 10		
Elect, gas and fuel	151 – 10		
Less 33%	50 – 10		
Salaries & NI	1664 – 4		
Materials	380 – 14		
Telephone	45 – 12		
Insurance	13 – 3		
Motor 33%	67 – 15		
Repairs	46 – 9		
Sundries	317 – 8		
Subs	12 – 16		
Superannuation	155 – 1		
Depreciation	152 – 6		
Balance – net profit	<u>2,617 – 9</u>		
	£5,639 – 8		£ 5,639 8

Comment

The Second World War experience on the home front is a topic that hasn't been given as much prominence as the fighting services and the war campaigns. This was very much another age. We cannot really directly compare these costs with today where expenses amount to at least 66% of income. Much has changed; the costs of being a dentist in the 21st Century would appear to be escalating. The General Dental Council has increased the Annual Retention Fee to £890 for a dentist to remain on the Dentist Register. The dental protection societies also charge large fees to provide professional indemnity, depending on the dentist's scope of practice. In previous times, costs were contained as often the dentist's wife was the dental nurse, receptionist and general factotum. Living above the dental surgery was fairly common and very convenient, but very difficult for the rest of the family.

The conversion from dental surgery to house was completed and the practice space is now like a new flat in our large house.

Acknowledgements

I am indebted to Drs Robin and Martin Gain for the early information about Ron's war service and the family history during the Second World War.

Author Biography: *Peter Frost is an Honorary Fellow of the Unit of Dental History KCL, Qualified at the Royal Dental Hospital 1969, Registered Dental Technician 1959, Honorary Senior Specialist Teacher at KCLDI, Specialist in Special Care Dentistry, in mixed practice two days a week.*

Samuel Cartwright, an early English dentist 1789-1864

Stuart Geddes

Abstract: A description of a letter bought at auction and the subsequent research of the 18th century dentist

Keywords: Dentistry, Philately, Baltimore Dental College, Waterloo Teeth

Introduction

As a retired dentist with an interest in the history of the profession and also philately, it was intriguing when an internet auction website turned up something that attracted both interests. The letter being auctioned was addressed to Chapin Harris at the Baltimore Dental College and was written by Samuel Cartwright, an English dentist who practiced in London. The content of the letter in itself was interesting for it is an acceptance of an honorary degree of 'Doctor of Dental Surgery' which the College in Baltimore was offering Mr Cartwright.

Who was Mr. Samuel Cartwright?

Samuel Cartwright was born in Northampton in 1789 and was originally an ivory turner. He travelled to London where he became a 'mechanical assistant' to a Charles Doumergue who practiced in Piccadilly and was the dentist to the Royal Family. His portrait can be seen in the National Portrait Gallery. Fig 1.

Fig 1 Samuel Cartwright



An ambitious man, Cartwright was able to attend lectures in anatomy and surgery at the Royal College of Surgeons and in 1811 felt confident to open his own practice at 32 Old Burlington Street, London.

Obviously successful, he became a Fellow of the Linnaean Society in 1833 (the world's oldest active biological society) and a Fellow of the Royal Society in 1841. He was also dentist to George IV. His reputation must have reached the new world, perhaps because of his association with the Fauchard Society, that he was offered an honorary degree by the Baltimore College of Dental Surgeons.

The Dental College in Baltimore was established in 1840 and is the oldest dental teaching institute in America, and the first in the world. It was established by two dental surgeons, Horace Hayden and Chapin Harris. Harris was the first Dean and Professor of clinical dentistry who, on the death of Hayden became its second President. The establishment of the Baltimore College is seen as one of the three crucial steps in the foundation of the dental profession in the United States. "A true profession is built upon a tripod: a formal organization, formal professional education, and a formal scientific literature. The United States was the leader in all three. In 1839-40, the American Society of Dental Surgeons was organized, the Baltimore College of Dental Surgery was established, and the first dental journal in the world, the American Journal of Dental Science, was founded. At that time there were only about three hundred trained and scientific dentists in the entire country; the rest were relatively untrained operators, outright quacks, or charlatans.

For Samuel Cartwright to have been offered an honorary DDS must have been a real honour.

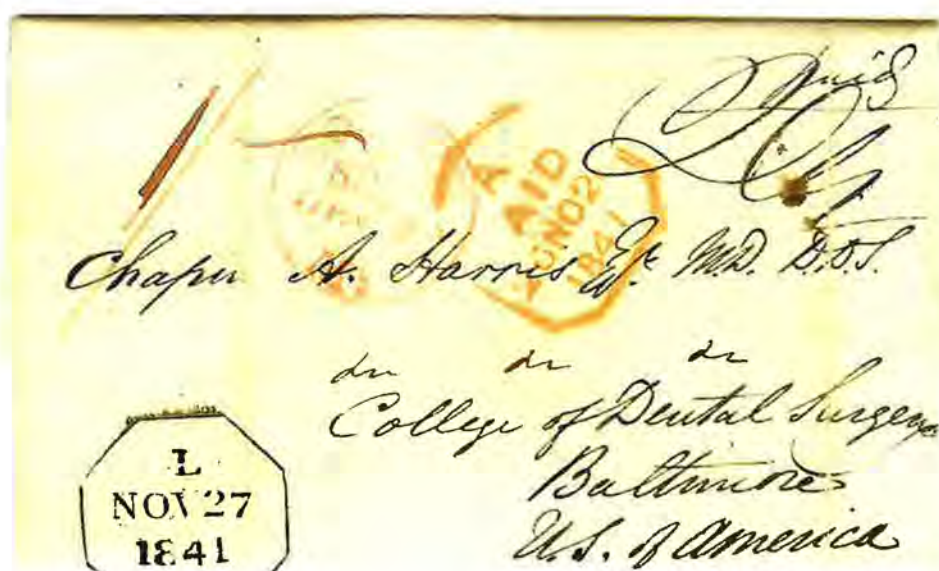
Examples of his work exist including this set of dentures made for a 'lady friend' of George IV. Fig 2. The teeth, which are natural are known as 'Waterloo teeth' because they were removed from the soldiers killed at this battle and sold on for use on dentures.

Fig 2 Dentures made by Mr. S Cartwright

His obituary, published in the British Journal of Dental Science in 1864, noted him to be renowned for his clinical judgement, his correctness and his clinical skills. It was said that in a normal day he would see between 40-50 patients which he did 'without sign of tiredness or hurry' and was reputed to have earned around £10000 per year, a considerable sum in those times. He retired in 1857 but succumbed to an 'apoplectic fit' the following year which resulted in his being partly paralysed. He died in 1864.



Fig 3 The letter



The letter itself Fig 3, was posted in London on 26 November 1841 and transmitted to Liverpool to await the Cunard ship 'Columbia' which sailed for Boston on 4th December, arriving on the 21st. It is pre-paid at the 1/- rate, an additional charge of 20³/₄c was collected from the recipient. The reverse bears a small seal inscribed '32 Burlington Street' and a VICO LANE mark. The letter reads:

Sir, The letter with which you have favoured me, announcing my admission to the degree of DDS arrived here during my absence from London. I should otherwise have had the pleasure of receiving and replying to it much earlier.

I assure you I feel much gratified by this additional distinction conferred upon one by the Faculty of the Baltimore College of Dental Surgeons and am proud to have my name enrolled in the same register with those of its distinguished members for whose talents and acquirements (though I am personally unacquainted with them) I have the highest respect and admiration.

I have the honour to be, Sir, your most obedient servant...

Acknowledgements

Thanks are due to Frank Bennett for researching the transatlantic crossing and to Mrs Rachael Bairsto, of the British Dental Association museum for biographical details on Samuel Cartwright and for the illustrations.

Author Biography: *Recently retired, Stuart graduated in 1970 from Birmingham Dental School. He spent a few years working in Edinburgh Dental Hospital and Infirmary before moving to Cardiff as a lecturer in restorative dentistry. He has owned dental practices in Monmouthshire and Forest of Dean, Gloucestershire. He has an MGDS and a diploma in criminology. He has been secretary and chair of two BDA sections, South Wales branch secretary, Chair of Welsh dental committee and Welsh Gov. Advisory Committee, Welsh Director and now elected to the Welsh council. He has been an avid collector of postal history with a sub collection of philatelic dentistry.*

A Donation to the BDA Museum concerning William Henry Waite 1839-1919

Rachel Bairsto

At the BDA conference in Manchester, the 2014/15 President of the North Western Branch of the BDA, John Mellor, donated a leather bound book or album to the BDA Museum.

The story behind the donation

The leather bound book with illuminated address had been originally presented to William Henry Waite in 1887 for his services to the profession. Since his death, the book had been kept by his granddaughter until her recent death. With no other living family members, the executors of her will, wished to donate the book to the BDA Museum.

Who was William Henry Waite?

Waite qualified DDS from Philadelphia and from 1865 practised in Liverpool where he was associated with the Liverpool Dental Hospital from 1886-1918 and was Dean from 1881-1888. Waite was a leading campaigner along with Sir John Tomes for dental reform which led to the Dentists Act in 1878. He was one of the first members of the Representative Board, member of the first editorial committee of the Journal, Secretary of the Midland Counties Branch of the BDA and President of the Association in 1910. He was also an early spokesman for the establishment of the Benevolent Fund and sat on its first committee giving its first £100. He was an excellent speaker and frequently spoke at meetings across the UK highlighting the benefits of membership of the BDA.

What was the story behind the testimonial and the book?

It would appear that William Waite's eye sight started to fail compelling him to relinquish working as a dentist in 1887. However, he was so well thought of by his professional colleagues that a collection was started both in the UK and in North America. The book or album contained all the letters that had been sent along with a record of the donation, which was a testimony to the esteem in which he was held. The hand written letters in the album are from all the eminent dentists in all parts of the UK. They include



W H Waite with Leonard Matheson (BDJ editor and BDA President in 1906) pictured on an excursion with the Midland Counties Branch

a letter from Sir John Tomes wishing to send a donation, followed up by another letter apologising that he had forgotten to include the cheque. The presentation of this book included a collection of £382 from his colleagues for his dedication and service to the profession.

I Renshaw who was responsible for the collection reminisced in letters in 1919 now in the BDA library, *'With the money we gave him he was able to clear his house in Liverpool of mortgage. He hadn't the slightest idea what we were doing. I was*

very proud to have had anything to do with it. It was no little task but at the same time a labour of love'.

The book also contains letters of appreciation from Sir Charles Tomes, Edwin Saunders (dentist to Queen Victoria) and many leading dentists from the USA. The high esteem in which he was held culminated in the presentation of his portrait at his inauguration as BDA President in 1910 by the North Midland Branch. This oil painting by leading portrait painter Frank Thomas Copnall is now in the museum collection.



Oil on canvas, W H Waite by Frank Thomas Copnall, 1910. Presented by the North Midland Branch on his inauguration as BDA President.

Rachel Bairsto accepting the book on behalf of the BDA Museum from John Mellor, President of the North West branch of the BDA



The Manchester LV Society Sixtieth Anniversary

Winston Senior

Abstract: A dental alumni society, whose members have met every year for the last 60 years

Keywords: Turner Dental School, University of Manchester, Alumni

Introduction

The LV (55) Society was founded sixty years ago on Friday 7th January 1955 by gentlemen hoping to graduate from the academic years 1954-5 of the University Dental School of Manchester. The objective of the society was to meet together regularly and to continue both social and professional interests. The society was to be called the LV Society. Due to ill health of members, it was decided that the final formal meeting celebrating the diamond jubilee would be held in June, 2015. This paper describes the formation of the society and some of the more memorable meetings.

Manchester Turner Dental Hospital and School

Entry to Manchester Dental School in 1949 was not long after the end of the Second World War (WWII). The devastation of the centre of Manchester in the Blitz was evident, but surprisingly the Turner Dental Hospital, which had only been completed in 1940 as a state of the art, purpose built dental school, had suffered little damage. However, over Christmas 1940, during an air-raid, it had received some bomb damage, blowing out most of the windows, and passed much of the rest of the war without any windows. Staff and students took on numerous war duties allocated by the Ministry of Health including routine dentistry for all service personnel, evacuees, refugees, and war-related factory workers.

Recruitment of Dental Students

In 1949 about twenty percent of the dentists on the Dental Register had not received any formal university training or qualifications. The profession had a poor public image in comparison with the rest of the healthcare professions. The image of a dentist was often portrayed by comedians on film and in the new TV media as an object of ridicule rather than a member of a healing profession. Consequently applications to the medical school by far outweighed applications to the dental school. During the post WWII period, it was difficult to recruit dental students. In those days most students with Biology, Physics and Chemistry qualifications sought places in medical schools. In order to address the problem of lack of dental students and improve the educational quality of dental education, the University of Manchester introduced a six year degree course (with exemptions available for year one), the Bachelor of Dental Surgery (BDS) to replace the four year training for the Licentiate (LDS) awarded by the Royal College of Surgeons, England. The first three years of the BDS followed the curriculum of the medical students. This meant sitting the first and second MB, ChB examinations with an option to change over to the medical school at the end of three years of study. Many students who failed to obtain a place in the medical school were thus encouraged to enrol for the BDS course. For reasons unknown to those who obtained the first and second MB, no one was allowed to change their course.

Student life 1949-55

The first MB consisted of Botany, Zoology and Chemistry. The second MB of Anatomy of the whole body. This involved many hours in the dissecting room and vivas every three weeks for two years and a full training in Physiology. After three years the dental students

left the medical school to enter Junior Laboratory where they trained in dental mechanics for 1800 hours under the supervision of instructor dental technicians. This led them into seeing patients, first for making and fitting full dentures and later into the Conservation Department to learn how to restore teeth, Fig 1.

The 1949 year started as a mixture of young school leavers and mature ex-servicemen many of whom had seen military action. Harry Davies DFC was in his forties. He already had a Classics degree from Oxford, 1937 and had flown Spitfires in the Battle of Britain. Others in the year had fought in the Italian and Balkan campaigns. Servicemen whose education had been disrupted by war service and hadn't taken a Higher School Certificate (A levels) often

referred to as Matriculation could apply for a Forces Education Supplement (FES).



Fig 1. Conservation clinic Turner Hospital 1952

Students who entered the dental degree course without having the usual subject entry requirements had a longer course to enable them to catch up with the knowledge of the basic sciences.

Entry into the clinical parts of the course was therefore made up of two groups. The 39 students admitted with a FES, and seven who had the university entry requirements.

This group of first year dental students, who would five years later, form the LV Society, met for the first time in the lecture theatre in the Turner Dental School. The windows, blown out during the war years had long since been repaired. Ernest Matthews, Professor of Prosthetic Dentistry, who later became the Dean of the Dental School and later still the Honorary President of the L.V. Society, delivered our first lecture. It outlined the curriculum we were destined to follow. He was very eloquent and finished his lecture with the words: "Ladies and gentlemen never forget that we are training you to be able to earn 12 guineas an hour". A guinea in 1949 was one pound and one shilling (5p) and an average working man earned at that time less than two guineas for a six and a half day's working week. This was the only time over the following five years that the sordid subject of money as a goal for training was ever mentioned.

In spite of the different ages and backgrounds, from the outset there was great camaraderie within the year. It was enhanced by extramural sporting activities; a Norwegian skiing holiday in 1951 (Fig 2), a camping holiday in Anglesey in 1953, coach trips and theatre visits. Alec Barcroft organised football and cricket matches (Fig 3), playing against Liverpool University teams.

Fig 2 Skiing holiday in Norway 1951



Fig.3 Staff - student cricket match at 'The Firs' 1953, A Barcroft and Dr Arthur Prophet

The comradeship built up in the first years led to the idea of forming the post graduate Fifty Five (LV) Society as finals approached. The group graduated in June 1955 (Fig 4).

Fig 4. Final Year dental students Turner Dental Hospital May 1955 the following individuals became members of the LV Soc.

Back row: left to right: W Senior, JM Barker, JE Preston, H Howell, JA Heathcote, S Lund, M Howorth, (P Bates), K Hallows, D Tinker.

Middle row: J A Hargreaves, JC Flitcroft, D Jones, J Watson, GL Taylor,--, J Greenhalgh, A tragen, D Walmsley, C Brown.

Front row: A Barcroft, W Fogg, Margaret Eirew, Jackie Hirst, Anne Sheldrake, J Huggins, Shirley Warburton, Helen Wain,--, J Hanley, A Acton.



May 1955.
Final Year.
Turner Dental Hospital,
University of Manchester

Panorgraphs
41, ENSKINE STREET,
LIVERPOOL 4.

Students not available at the time of the photo included: E Hougie, H Davies, M Royle, D Seel, C Taylor, D Thomas, W Tyldesly, T Brooks.

The first meeting

The first meeting to discuss the proposal that a postgraduate society should be considered to maintain friendships formed during the previous five years took place on Friday 7th January 1955 in the Dental School lecture theatre. It consisted of 24 gentlemen in the academic year 1954-5 from the University Dental School of Manchester. Although there were five ladies in the year, the Society formed in 1955 was initially, and according to the custom of the time all male. Alec Barcroft took the Chair and Bill Tyldsley, one of the more mature students, having already gained a doctorate in both music and metallurgy before studying dentistry, became Secretary. Bill later became Dean of the Liverpool Dental School and passed the job of Secretary to Arthur Acton, a much younger colleague.

Norman Wild, the first NHS Orthodontic Consultant and teacher was asked and agreed to be our President. Two years later Norman died, Professor Ernest Mathews who gave us our first lecture, became the Honorary President. From then onwards Professor Mathews attended every L.V. function until his death aged 92 years of age. He remained alert and eloquent to the end, each year giving amusing and entertaining speeches. Ernest's widow, Pauline continued to befriend the Society and following the death of Ernest, gifted every member a solid gold lapel pin portraying the Turner Dental Hospital elephants. At the first meeting in 1955, Winston Senior was elected as Treasurer; the annual subscription was set at five shillings (25p). Colin Taylor later took over the role of Treasurer. It was unanimously decided that the Society would be called the Fifty Five Society and take as its insignia the Roman L.V. It was also decided that a society tie should be designed and a minute book and gavel purchased. The minute book has been meticulously kept and will be donated to the museum of the University of Manchester Dental School.

The first dinner

Twenty one members attended the first dinner held on Friday 8th July 1955 at Bill Tyldsley's favourite restaurant, the Princess restaurant, Oxford Road Manchester. This was a meal consisting of Turtle soup, fillet of sole Veronique, Fillet steak garni, Peach Melba, cheese and coffee costing £1.00.

Following this first dinner the society has met in June every year for sixty years.

Members of the Society

Although originally an all- male society, in 1961 the five ladies who also qualified in 1955 were invited to join. As a consequence the full list of members became:

Acton AB, Barcroft AT, Barker JM, Bury W, Brooks T, Brown CC, Coterill E, Davies H, Flitcroft JC, Fogg WJ, Greenhalgh J, Hanley JM, Hallows K, Hargreaves JA, Heathcote JM, Howorth M, Hougie E, Howell H, Johnson W, Huggins JA, Jones D, Lund S, Preston JE, Royle M, Rose E, Senior WB, Seel D, Taylor GG, Taylor GL, Thomas FD, Tinker D, Tragen A, Tyldsley WR, Walmsley LD, Whittaker LB, Watson J.

All of the members contributed to dentistry during their professional lives, but the following members of the society occupied national positions during their professional lives:

Arthur Acton, Senior Regional Dental Officer.

John Huggins, Senior Magistrate.

Alec Barcroft, Senior Magistrate.

Derek Seel, Dean of the Faculty of Dental Surgery, Royal College of Surgeons England.

Tony Hargreaves, Dental Dean Toronto University, Canada.

Tony Brooks, Runner up, Champion European Formula One, racing car driver.

Bill Tyldsley, Dean of Liverpool Dental School.

Special mention must be made of Arthur Acton (1930-2014), who was Honorary Secretary of the society until 2010. He kept meticulous records of the society's activities and organised many professional and social events. Without Arthur (Fig5), it is doubtful the society would have continued to exist.



Fig 5 Arthur Acton

Venues for meetings

The majority of meeting have been held in the Stanneylands Hotel, Wilmslow. In 2000 the LV Jubilee Cruise took place on the Old Dutch Barge, the Town Quay, Northwich. The venue for the 60th and final reunion dinner was Knutsford Golf Club. The menu on this occasion comprised: smoked salmon and prawn salad, beef wellington, Pavlova, coffee and chocolates, costing £35.00.

Other meetings

21st Annual Dinner

Held in June 1975, this event was well attended. The guests included; Professor Sir Arthur L Armitage, Vice Chancellor University of Manchester; Professor GS Nixon, Dean of the Turner Dental School Manchester (Fig6); Sir Harry Platt, former President of the Royal College of Surgeons England, and Mr L Langford, Innominate Club founder (this club had members made up of medical and dental students of the University of Manchester who excelled in some form of sport).



Fig 6. From left to right: Winston Senior, Professor Ernest Matthews, and Professor George Nixon

Invited guests at other meetings include: Mr F Monks, Consultant Oral Surgeon, Bolton Group of Hospitals; Mr P R Lewis, Dental Practitioner and staff member; Professor A Grant, Professor of Prosthetic Dentistry; Mr HL Eirew, Specialist Orthodontist; Professor J Moore, Professor of Oral Surgery Dean of the Dental and later the Medical Schools; Senior academic staff members: Mr S McKenzie, Mr TC Rowbotham; Professor Sir Frank Lawton, President of the General Dental Council; Professor P J Holloway Dean of Manchester Dental School (1987); Colonel Clive Roberts, Deputy Director Army Dental Services Berlin (1987).

Silver Jubilee 1980

This meeting was attended by 24 members of the LV Soc, 10 former members of staff of the Turner Dental School, Professor J Moore, Dean of the Manchester Medical School; Professor AA Grant the Dean of the Manchester Dental School, Sir A Armitage the Vice Chancellor of the University of Manchester. The 10 former tutors of the Turner Dental School included: G Cocker, DH Cartledge, C Cooke, G Ashcroft, H McIntyre, J S McKenzie, J Harrington, DT Hartley, EP Turner and JK Holt.

Pearl Jubilee 30th 21st June 1985

Guests included: Professor Mark Ferguson, Professor of Basic Dental Science; Professor Douglas Jackson, Chairman of the British Fluoridation Society; the President and members of the Innominate Club.

40th Annual Dinner 9th June 1995

The guests were: Professor Nairn Wilson, Dean of the Turner Dental School; Professor Martin Harris, Vice Chancellor of the University of Manchester; Vincent Knowles, Registrar of the University of Manchester, together with senior academic staff of the Dental School, Dr JD Lilley, DH Cartledge, Dr JK Holt, PR Lewis, JS McKenzie, Dr EP Turner, and Barbara Turner and Professor AS Prophet (Fig 7).



Fig 7 Fortieth Annual Dinner

41st Annual Dinner 7th June 1996 A cheque for £1400 was presented to the Professor W Shaw Dean of the Dental School in memory of Professor Ernest Matthews for the provision of a lectern in the new Manchester Education Centre, (ManDEC) which had been built on the front elevation of the Dental Hospital.

Golden Jubilee 3rd June 2005 Guests included, Professor Alan Gilbert, President and Vice Chancellor of the University of Manchester; Professor David Gordon, Vice President and Dean of the Faculties of Medicine, Dentistry Pharmacology and Nursing.

Diamond Jubilee 12th June 2015

In 2015 there were 20 surviving members of the LV Society: Alec Barcroft, Michael Barker, Jackie Brown, Helen Cowie, John Flitcroft, Ann Holmes, Ted Hougie, Harry Howell, Michael Howorth, Margaret Rose, Michael Royle, Derek Seel, Winston Senior, Valerie Stumfl-Allwood, Colin Taylor, Graham Taylor, Tony Brook and Ellis Paul.

As members reached their 80's it was decided to hold a special, last formal event inviting all surviving members of the LV Society and their families and friends to celebrate 60 years of

continuous fraternity. This was held in Knutsford Golf Club, of which one of the founders of the LV Society, Harry Howell was a Past President. Amongst the attendees were 13 of the 20 surviving members accompanied by their families and friends. Guests included: Professor Nairn Wilson CBE, President of the British Dental Association and Past Dean of the University Dental School of Manchester; Professor Paul Coulthard, Head of the Dental School University of Manchester; Mrs Maureen Attrill representing SOMANDA; Dr James Hopkins, University Historian and Heritage Manager and Dr Margaret Wilson former Consultant in Restorative Dentistry, Manchester Dental Hospital and Editor of the Dental Historian (Fig 7).

Fig 7 Group Photo of the LV Society members and friends at the 60th and final formal meeting



Photo courtesy of helenmary images

Acknowledgement

The LV Society would like to thank Henry Schein and the University of Manchester for generously supporting the 60th Anniversary Reunion of the LV Society and this publication. Also for the assistance of Dr Margaret Wilson and Professor Nairn Wilson in planning the event.

The Elephant Logo for the Turner Dental Hospital and School, Manchester

Margaret Wilson

Abstract: The elephant logo for the Turner Dental Hospital and School is illustrated and the design is attributed to Lady Worthington, wife of the architect Sir Hubert Worthington.

Keywords: Turner Dental Hospital and School, Sir Hubert and Lady Worthington, Elephants

At the Annual General Meeting of the Governors of the Manchester Dental Hospital and School held in Manchester on 22nd February 1938 it was announced that a suitable site for the new Manchester Dental Hospital had been chosen.

The architect

The firm of architects that had been appointed to design the new Dental Hospital and School were a well-established local Manchester firm - Thomas Worthington & Sons.

The architect, Sir Hubert Worthington (1886-1963) began his professional training at the Manchester School of Architecture. He graduated with First Class Honours and worked for some time as assistant to Sir Edwin Lutyens in Rome. He was a Captain in the Manchester Regiment but was severely wounded in the Somme in 1916.

In 1923 Worthington was appointed Professor of Architecture at the Royal College of Art. He resigned in 1928 to return to the family practice of Thomas Worthington & Son which had been set up by his father, and in 1929 he took up the Slade lectureship in architecture at Oxford.

Early on in his career he designed the War Memorial and Armoury at his old school, Sedburgh, and the cotton textile section at the British Empire Exhibition of 1924. Later he was commissioned to design several college and university buildings in Oxford.

Sir Hubert Worthington was responsible for the design of the Turner Dental School and Hospital in Manchester and for additions to the Manchester Royal Infirmary, the Royal Eye Hospital and the University of Manchester. He was also architect to the war damaged Manchester Cathedral and Westminster School. He served at various times as Professor of Architecture at the Royal College of Art, Lecturer in Fine Arts at Hull and Lecturer in Town Planning at Manchester University. He was a vice-president of the Royal Institute of British Architects and president of the Society of Architects in Manchester.

Planning the new Manchester Dental Hospital and School in 1938

The new Manchester Dental Hospital and School was to be built on an island site at the corner of Lloyd Street and Bridge Street (now re-named Bridgeford Street). The site was adjacent to the Medical School and at the other end of the street from the existing Oxford Road Dental Hospital. The houses occupying the site were compulsorily purchased and demolished. The new building was to form three sides of a square with staff car parking facilities in the central quadrangle. The fourth side, facing the Medical School was to be constructed at a later date and was intended to house the Medical Library

The construction of the new building began in August 1938 and continued throughout the war years, finally being occupied in May 1940. In gratitude to Sir Samuel Turner of Rochdale, the major benefactor, the School was named the Turner Dental School. When the School opened it also had, for the first time, a logo - two elephants Fig 1.

The Logo

Although the building was designed by Sir Hubert Worthington, the design of the elephant logo has always been attributed to his wife, Lady Worthington, who had trained as an artist. Despite a lack of documented evidence, the story has always been told that Sir Hubert was passionately fond of elephants since visiting Africa on a holiday. As a tribute to her husband and the work carried out on human teeth in the Dental Hospital, Lady Worthington designed the logo to include two elephants facing each other, each with a fine pair of ivory tusks

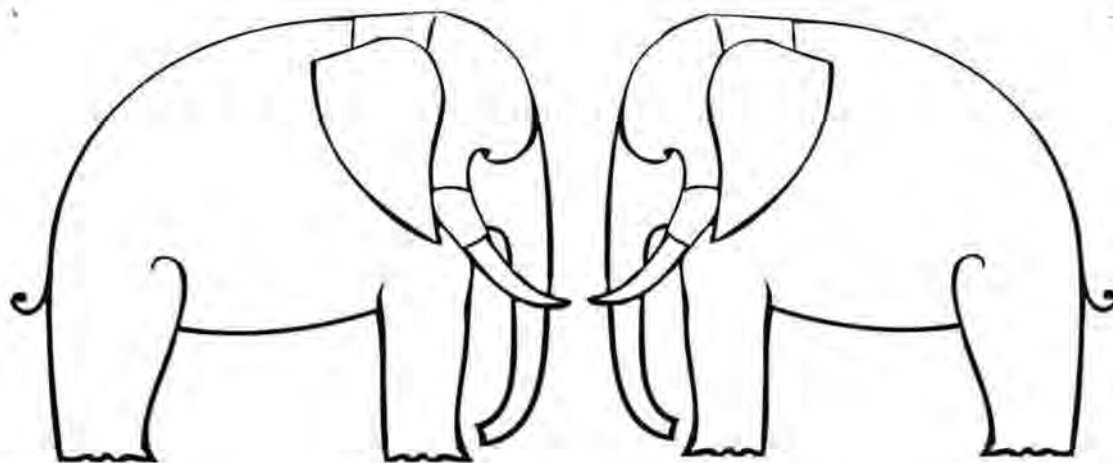


Fig 1. The elephant logo

The outline of the elephants is a very simple design, yet the whole logo has an art deco feeling with no extra or unnecessary lines or embellishment.

The elephant logo was positioned on the windows over the main entrance to the Hospital and a smaller version over the students' entrance in the East wing Fig 2. Both windows were destroyed during the refurbishment of the main entrance and conversion of the student entrance to a service entrance, but fortunately copies of the logo were retained in the Dental Hospital Museum.

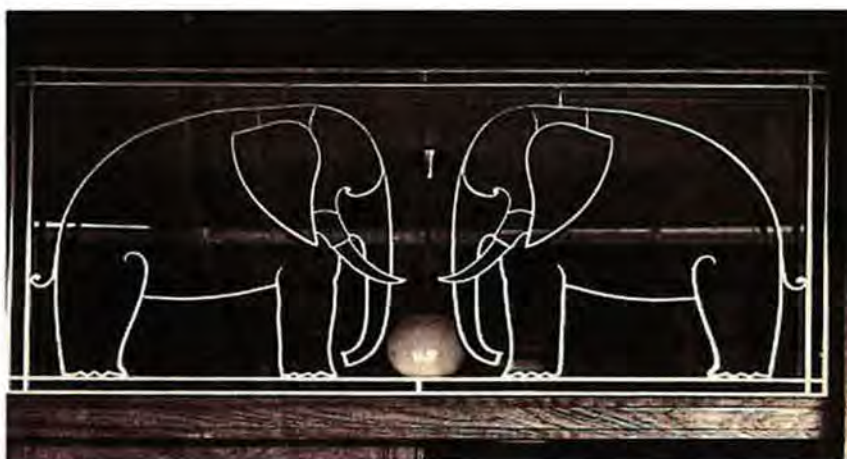


Fig 2. The logo in-situ above the door of the dental school before refurbishment work.

The logo continues to be used by the alumni society, SOMANDA, on alumni ties etc. and has also been incorporated into various internal windows, doors and brickwork ramps outside the hospital.

Lindsay Society News

Member Honoured

At a recent meeting of the Lindsay Society for the History of Dentistry, Peter Frost was presented with Honorary Membership of the Society. This award recognises Peter's commitment and support for the society over the past 20 years. Peter has been involved with the society in a variety of roles since 1994 including Committee Member, Honorary Treasurer for 11 years and has written for the Dental Historian and gave a demonstration of a Victorian gold foil filling at BDA conference.



Peter frost accepting the award from Rachel Bairsto, President of the Lindsay Society, in front of the bust of Sir John Tomes at BDA Headquarters, London.

Dates for your Diary

There are a number of very interesting meetings planned, so please keep these dates free in your diary.

October 2015

The Lindsay Society meeting will be held in Lincoln. Our Honorary Secretary will be sending out details to the members in the near future

October 2016

A joint meeting with the American Society of the History of Dentistry. This meeting will take place in London.

March 2017

A joint meeting with the Royal Odonto-Chirurgical Society of Scotland. This meeting will be held in Edinburgh.

Lindsay Society members will automatically receive information about these meetings.

If you would like to attend any of these meeting and you are not a member of the Lindsay Society, please email the Honorary Secretary, details on page 46

One Man's Tortuous Foray Into Oral and Maxillofacial Surgery

The Story Behind the Evolution of
Maxillofacial Surgeons from Hospital Dentistry



Laurence Oldham describes his training as a dentist soon after the second world war and his practice in the Royal Air force during national Service. The tedium of General Dental Practice and frustration of an unsatisfying academic job in the north of England is contrasted with the inspiration of a Rotary Foundation Fellowship in the USA and surgical practice in East Africa with committed surgical mentors.

Appointed as a Consultant Dental Surgeon in 1968 Laurence Oldham widened the scope of hospital dental surgery after gaining the confidence of surgical colleagues and inviting friends to help him with operations he had not hitherto been trained to do.

This is just one of many stories from his generation of how Oral and Maxillofacial practice evolved from hospital dentistry and how ambitious young surgeons developed their craft without anything approaching an adequate training by today's standards.

Hot Spots and Hot Seats

An Experience of Practice in
Oral and Maxillofacial Surgery



John Bradley

John Bradley was formerly Consultant Oral and Maxillofacial Surgeon, Council member of the British Association of Oral and Maxillofacial Surgeons and Editor of the British Journal of Oral and Maxillofacial Surgery.

John takes us on his journey from the Hot Spots of the bombing of second world war to the Hot Seat as Chairman of a Health Trust in Lancashire.

The journey is not always smooth. There is confrontation around every corner, with Managers, Politicians, Plastic Surgeons and even Royalty. All are overcome; an arrogant General Surgeon meets his match in the last chapter.

But there is also camaraderie, cooperation, innovation, friendship and humour.

John's story is a part of the history of the development of the speciality of Oral and Maxillofacial Surgery in the second half of the twentieth century in England. Not so many years ago but in many respects a different era when trainees were almost permanently on call and a Consultant could pick up the telephone and speak to the Minister of Health.

A JOURNEY THROUGH A LIFE

FROM DENTISTRY TO MEDICINE THROUGH THE
DAWN OF MAXILLOFACIAL SURGERY TO
HOSPITAL MANAGEMENT



RUSSELL HOPKINS

Russell Hopkins career journey passes from failure in the Higher School Certificate to national recognition for his work as a surgeon, medical manager and politician.

After re-taking A levels the young Russell turned down a place at Medical School and undertook Dental training instead. General Dental Practice in Cambridge and Rhodesia caused disillusionment but Oral Surgery inspired him to medical training as a mature student.

Work for a dishonest dentist led him to a General Dental Council disciplinary committee. Exonerated he remained sceptical of the dental establishment and later of dental academia. He declined invitations to apply for a Chair in Oral Surgery.

Russell describes his adventures in Medicine and Surgery during a time of evolution of his speciality, including regular work as a ship's surgeon. There are frustrations, confrontations and pleasures.

As General Manager of the University Hospital of Wales he engaged in conflict with inefficiency and obstinacy. His third career as a Trust Chairman brought more conflict from both local consultants and politicians.

Escape from Pain

The History of the Discovery of Anaesthesia
as Written by Sir James Paget in 1879



Editor: Andrew Sailer

The fascinating story of the first anaesthetics has not been told better than in this 7000 word essay from 1879 by James Paget.

He takes the reader from the first realization of the analgesic properties of nitrous oxide to the arguments over who used anaesthetics first and who should gain the financial reward and approbation for the discovery. He provides the evidence that it was neither of the dentists Wells or Morton who used anaesthesia first.

To Paget's paper has been added a treatise on the life of this amazing man from his schooling and apprenticeship in Yarmouth through his slow rise to become the premier surgeon and medical opinion in Victorian England.

Further chapters have been added about the first anaesthetics to be used in England, the relative merits of chloroform and ether as anaesthetics agents and examples of surgery before anaesthesia. The principal list of Paget's many writings is in the appendix.