The painting shows two monks in their infirmary, trying to find a remedy for one monk’s toothache. It is notable in this picture that the senior monk has not used invasive means to relieve his brother’s pain: certainly there are some dry looking anatomical specimens of extracted teeth on the table and the cloth around his wincing patient’s head suggests that a poultice has been applied to draw the swelling but there is no evidence of blood from a recent extraction socket. The scene portrayed in this way is in accord with the mistaken belief, which was promoted in the 18th Century by Quesnay, an uncritical medical historian, and still prevalent until recently, that medieval clergy were not allowed to practise medicine or surgery after an edict of the Council of Tours in 1163 which stated, ‘ecclesia abhorret a sanguine,’ - the church abhors the shedding of blood. This, now infamous maxim, is often quoted in tandem with a decree by Pope Innocent III at the Lateran Council of 1215 which forbade all clerics in higher orders, that is, subdeacons, deacons and priests, to carry out surgical operations which involved cutting or burning, to show that from that point onwards, surgery was abandoned to the illiterate and wilfully separated from the practice of medicine. Since most physicians during the middle ages were also in orders of some kind, it was supposed by medieval historians that monks delegated bloodletting or tooth drawing to lay brothers, usually the barber who kept his tonsure shaved. However recent research suggests that the view that the medieval church considered surgery of any kind to be unseemly for the clergy is misleading and is sadly the result of a faulty reading of the primary documents. The Church did not prohibit the practice of surgery for the vast majority of clerics but only those in higher orders, namely those who were ordained as priests. If a priest physician indirectly caused the death of a patient during or after surgery he was liable to a charge of murder and thus the loss of his priestly faculties to administer the sacraments. This was an extremely serious matter in an age of faith as the following anecdote indicates:

The Apostolic See were consulted about a monk who was also a priest, who believed that he could cure a woman of a tumour of the throat. Acting as a surgeon, the monk opened her throat and removed the tumour with a knife. When healing was well underway, he discharged the patient but not before impressing on her that she was to take care not to expose the incision in her throat to the wind, lest she die. Alas, the woman disregarded his advice and went into the fields to gather crops; the wind blew, her wound opened and she died of a haemorrhage. The Holy See were asked to adjudicate on whether the monk could now lawfully exercise his priestly function. The judges replied that although the priest had been wrong not to delegate the surgery to a monk who was not ordained or to a layman, they recognised that he was an expert in surgery and keen to practise his art for the benefit of the sick. They noted that if he had not acted out of cupiditas or avarice he should not be condemned for his action. The woman had, after all, ignored his instructions. He was permitted to continue to celebrate Mass for his community.

The practice of medicine and surgery was encouraged by the medieval church, so long as these disciplines did not supersede the study of theology which was considered by educated laymen and clergy alike, to be the Queen of the Sciences. It is true that medieval church councils took a dim view of monks who abandoned their cloisters and the life of prayer to which they had vowed their life, in order to study at a university for more than two months at a time but they did not in any way seek to hamper the progress of knowledge in medicine and surgery. On the contrary, there is evidence of church support: the papal confirmation of the statutes of the medical faculty of the University of Montpellier (1239) praises the study of medicine, saying: ‘medicine shines forth among the liberal arts.’

Author: Jo Cummins, Editor.


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Illustration on the Front Cover and Page 2, The Powder, reproduced with the permission of the Wellcome Library, London
The Autumn Lecture 2012
Our Autumn Lecture, which was held at Glasgow Dental Hospital and School on 23 October 2012, was once again combined with the Dental School’s Menzies Campbell Lecture. The speaker, Dr Paul Riley, who formerly worked for Unilever and is currently a research fellow at Sussex University, gave an engaging, colourfully illustrated, account of ‘The Role of Science in the Development of Oral Care Products.’ Dr Riley’s approach to his subject was wide-ranging, from the biochemistry of dental pathology, to the history of the packaging of dental products, but he emphasized the development of fluoride dentifrices since the 1950s by rival commercial companies such as Unilever, Glaxo and Proctor and Gamble. The audience heard how pharmaceutical companies formulate products aimed at combating particular dental problems such as caries, periodontal disease or halitosis. Before the launch of a new toothpaste for example, intensive studies are carried out by the manufacturers to ascertain the oral hygiene routine and lifestyle of potential customers. The product was then designed and marketed to appeal to contemporary ideals of beauty or vitality. Dr Riley revealed that the taste and colour of a toothpaste was enormously important and that preferences varied in different parts of the world. Sales of peppermint pastes were high in western Europe but pineapple was preferred in China and wintergreen or cinnamon in the USA. He confirmed that, whereas oral products had once been marketed as protection against decay, or the build up of tartar, current consumers are attracted to preparations which claim to whiten the teeth.

The Spring Lecture 2013
The Spring Lecture will be delivered by one of our consultant editors, Dr Mike Gow. As usual, members will be notified of the title, date and venue before the event.

The Art of Dentistry, The Menzies Campbell Pictures
The front pages of previous editions of DHM have featured paintings from the little known but fascinating Menzies Campbell Collection of dental art which is housed at The Royal College of Physicians and Surgeons of Edinburgh. In this richly illustrated overview of the whole collection, Professor David McGowan, and the art historian Dr Maureen Park, lead us on a tour of the pictures, drawing together the various themes on the history of dentistry which the works reveal and discussing some of the technical aspects of their production.

The Foundation of ‘International Dental Aid’ After World War II
When the Allies liberated Nazi Concentration Camps at the end of the Second World War, they were horrified by the condition of the surviving prisoners, the great majority of whom were in the final stages of starvation. Naturally, the Allied medical corps responded by attempting to feed them but unfortunately, as the former camp inmates were now so unused to a normal diet, they could not digest the more abundant rations provided and many died. A more gentle, progressive, feeding programme for the afflicted was quickly established but it became apparent that the victims’ ravaged oral health was a significant contributor to their inability to derive nourishment from the new specially formulated meals which had been developed. Xavier Riaud describes the international efforts which followed to set up stationary and mobile dental centres to restore a functioning dentition both to former prisoners and to war ravaged populations in general.

Plaster, Wax and Hot Metal: The Reminiscences of Fred Longrigg, Dental Technician.
In a lively addition to our ‘Reminiscences’ series, former dental technician Fred Longrigg recalls his early training in a general dental practice in Carlisle not long after the foundation of the NHS. Some of his duties as an apprentice at that time, such as polishing the practice owner’s golf clubs or occasional debt collecting, would amuse present day technicians but Mr Longrigg writes with satisfaction about the rigorous but comprehensive laboratory training he received there and in particular his pleasure in making orthodontic appliances which greatly improved the well-being of the practice’s young patients.
Word of Mouth: Charlemagne’s 

During the early middle ages, barbarian chieftains controlled Europe by brute force and ‘Word of Mouth’, that is, without written law codes or documents. However after the accession of Charlemagne, King of the Franks, in 768, (crowned as Emperor in 800) the written word became important once more in governing the land. Xavier Riaud examines The Capitulare de Villis, one of Charlemagne’s documents which has a surprising dental content.

Web News will return in the next edition.

Mrs Audrey Noble: An Appreciation on Retirement as Secretary

by Rufus M. Ross , Chair of the Henry Noble History of Dentistry Research Group

After a considerable amount of reflection, Audrey has decided to retire from the position of secretary of our Research Group. She has been putting off making the decision for some time now but eventually decided that travelling back and forwards from Largs in all kinds of weather, was just too much. Audrey was appointed secretary when I took over the chairmanship of the group on the death of her husband Dr Noble, nearly eight years ago. Although reluctant to take on the position, it was soon clear that she had a natural ability to organise and although not dentally qualified, she always produced accurate accounts of our lecture meetings.

Apart from her secretarial duties, Audrey was an important member of the executive and made major contributions to the management of the Group. She proved to be a great support to me, personally as Chair. She was always available with considered advice and never forgot to mention ‘Don’t forget to bring sandwiches’. In addition to extensive secretarial duties, Audrey was responsible for the bi-annual distribution of the Group’s Dental History Magazine and although ably assisted by Pat Lilly this was an onerous job entailing further journeys to Glasgow. However, we will not be missing her presence at meetings as Audrey has agreed to stay on as Minute Secretary to assist our new secretary Dr Robin Orchardson, a long-standing member of the Group who has agreed to become the new secretary.

Graduation Ceremony

The Chairman of the Henry Noble History of Dentistry Research Group, Dr Rufus M. Ross, recently graduated for the fourth time on 14 April, 2012. Dr Ross received a BSc from the Open University at a Ceremony in the Glasgow Royal Concert Hall. In addition to his degree in dentistry, Dr Ross also holds a BA (Hons) from the Open University and a PhD from the University of Glasgow. Our Chairman says that it was the stimulus to acquire knowledge which prompted him to join the Open University while he was still in dental practice. He added that he has continued to study to improve himself and to gain a better understanding of his fellow human beings.

Dr Ross was the oldest graduate at this year’s Open University ceremony and is pictured here with the youngest graduate, Nicola Stapley.
The Art of Dentistry
The Menzies Campbell Pictures

by
David McGowan & Maureen Park

The Collection
In 1964 John Menzies Campbell, Glasgow practitioner and noted dental historian and collector, decided to donate his collection of dental items, including 104 paintings and prints, as a closed collection to the Royal College of Surgeons of Edinburgh. That college ‘was prepared to provide suitable and desirable accommodation for permanent exhibition of this collection’, and Menzies Campbell published a catalogue of the ‘Dental Instruments, Pictures, Appliances, Ornaments’ etc, under the imprint of the college in 1966. The catalogue notes reveal his own attitudes and opinions, and though he was at pains to be accurate about dating, the only source of external advice acknowledged is a reference in Number 25 to Dr F.N.L. Poynter.

The aim of this article is to examine the collection as a whole and seek to place the material in the context of the history of art, as well as that of dentistry. The collection is among the world’s largest and ranks alongside those of the British Museum, the Wellcome Institute, the British Dental Association and the National Museum of Dentistry in Baltimore, USA. We have no information on the source and acquisition of the pictures and the cataloguing order has no obvious logic. The pictures depicting Ruspini are listed first, followed by the cartoons by the celebrated English artists of the late eighteenth and early nineteenth centuries. The rest of the pictures are in roughly chronological order, though the copper-plate engraving by Lucas van Leyden, 1523, (Number 25 Figure 1) and the woodcut by Jost Amman, 1568, (Number 104 Figure 2) seem to be the earliest pieces.

Many of the prints are versions of original oils from Dutch, Flemish or Italian painters of the seventeenth century. The pictures are housed in the Surgeons Hall Museum at RCS Edinburgh and although not all are on display at any one time, the rest can be accessed by arrangement with the Museum staff. Photographs of most of the items were made available to us by Dr Paul Geissler, Honorary curator of the Menzies Campbell collection.

This is a remarkably diverse collection in terms of its art. It contains mostly European paintings and prints ranging from the sixteenth to the nineteenth...
centuries, but also includes a Japanese print. Most are of a very high quality. In the seventeenth century Dutch art witnessed a Golden Age, and with their new-found wealth through trade, there was an increased demand for paintings (for the wealthy citizens) and prints (for the less well-off). Rembrandt may have been an expert in portraiture, history painting, religious themes, landscapes and a master of etching but he was not typical. Most artists specialised in one subject and a new theme emerged – ‘genre’, scenes of everyday life. These images can be taken at face value, but the Dutch would have appreciated them for their many hidden meanings and their symbolism derived from medieval traditions of religious subjects. Genre scenes were moralising tales, reminding the viewer how to behave and reflecting on spiritual and physical matters, but the message is usually conveyed in a light, whimsical manner. By the eighteenth century such imagery was also being mass-produced in other European countries such as Italy, Germany and France and, of course Britain.

Print collecting
Painting and print collecting, once the domain of the very wealthy, became accessible for the middle classes in the mid eighteenth and early nineteenth centuries, in part due to the widespread popularity of the prints by the great British artist William Hogarth. In Britain there was a ready market for prints of all subjects from serious, classical or biblical themes to humorous caricatures and gentle comic compositions. Like the Dutch, the British have a real love of such imagery and print sellers abounded in all the major cities by the early nineteenth century. Dentistry might seem an unusual subject but medical prints proved very popular. Hogarth’s famous print, The Company of Undertakers, which shows a collection of suspect medical practitioners, was meant to be a criticism of their profession; however, it seems that doctors loved the print and most copies ended up displayed on the walls of their consulting rooms. Dentistry, allied as it was to the Barber-Surgeons, proved to be a natural topic for humorous imagery as well, and allowed details of the instruments, medicines and practices to be recorded. Some at least would have appealed to practitioners; others, such as the quality paintings after major artists, would have been collected for the quality of their execution and design. The more basic prints, such as, The Town Tooth Drawer (No. 20, Fig. 3) and, Hob and Stage

Doctor (No. 68, Fig. 4) would probably have been designed for mass production and sold very cheaply. The hand coloured versions, such as

Fig. 3. ‘The Town Tooth Drawer’
Woodcut, William Davison, 19C., (No. 20)

Fig. 4. ‘Hob and the Stage Doctor’
Woodcut, William Davison, early 19C., (No. 68)

Fig. 5. ‘Hob and the Stage Doctor’
Coloured Woodcut, William Davison, early 19C., (No. 69)

Number 69, (Fig. 5) would have been more expensive. Almost everyone, with the exception of the very poor, could have afforded to display prints in their homes and the humour that is revealed in dental prints must have appealed to many people.
Symbolism in dental images

Toothache

Toothache must have been a familiar and distressing experience for many in past ages and, for example, is frequently depicted in stone carvings in medieval cathedrals. The collection includes two vivid examples of such suffering, both original oil paintings. A verse from Robert Burns ‘Address to the toothache’ is illustrated in Number 51 (Fig. 6) and though dismissed as of indifferent quality, like Number 74 (Fig. 7) it has a strength of feeling that transcends its unsophisticated execution. Number 86 (Fig. 8) in contrast, is a version of a print which is probably an allegory of the decline of clerical influence in France.

Tooth Extraction

Most of the images in the collection are of tooth extraction. It is such a popular subject because it was one pain that most people would have experienced and understood and so it became a standard visual representation of touching or feeling, one of the five senses (sight, hearing, touch, taste and smell). Occasionally one image was used to represent all the senses but more common was for each sense to have an individual image. A good example is to be found in the numerous copies of Gerrit Dou’s ‘de tandartz’—*The Tooth Puller*, Numbers 34 (Fig. 9), 61 (Fig. 10), 70 (not illustrated), and 94 (Fig. 11.).
The original painting (Gemälde Galerie, Dresden) is by the Dutch artist Gerrit Dou (1613-1675), a pupil of Rembrandt, and dated 1672. (Copies of Dou’s work have the German spelling of ‘de tandartz’ which is ‘Der Zahnarzt’). The Wellcome has at least 6 versions of this image. We have four versions: Number 34 (Fig. 9) is an oval framed oil on copper is possibly eighteenth century but could be late Seventeenth century; it misses out the details of the window frame; the dentist wears a brown jacket and the scene is framed by green curtains. Note the lancet case, bowl and testimonial in the foreground. Number 61 (Fig. 10) is rectangular, oil on metal, is probably later, eighteenth or early nineteenth century. Number 70 (not illustrated) is rectangular, oil on metal, and probably nineteenth century; that image misses out the window frame, the details below the window ledge and has little background detail. Number 94, (Fig. 11) a hand-coloured coloured lithographic print, mid nineteenth century (lithography was not invented until very late eighteenth) is mounted on cream card and is in format by far the closest to the original. In each, the dentist holds up the extracted tooth in one hand and touches the head of the child; in turn, the child touches his gum, the site from which the tooth has been removed and from which blood is pouring and also rests his other hand on his hat. So visual reference is made to four textures – enamel, hair, gum and hat (two for the mouth and two for the head) and one of the five senses – touch or feeling. In fact, this image invokes all five senses – the dentist staring at us, the groan of pain from the boy, the taste of blood, the pain experienced and the smell of decay from the boy’s mouth and the extracted tooth.

This interpretation may seem far fetched, but there are similarities to the etchings Number 39 (Fig. 12) t’gevoel by Jan Both and Number 95 (not illustrated) Tactus by Alex Voet. Both are recorded in Menzies Campbell’s catalogue as parts of series on The Five Senses and this is supported in records for similar prints held in other collections such as the British Museum, the Wellcome Library and the British Dental Association.

The title of Numbers 77, 98 and 99 is The Dentist, or Teeth Drawn with a Touch. Number 79 (Fig. 15) is identical but titled ‘The Town Toothdrawer’ (a companion piece to Number 78, not illustrated). Number 98 (Fig. 13) is an oil painting from early nineteenth century and Numbers 77 (not illustrated) and 99 (Fig. 14) are mezzotints (a printing technique that allows subtle shading of light and dark, imitating the subtle nuances found in a painting) from the late eighteenth century.
The legend that appears below the image reads:

‘Ye Worthies of the British Nation,
Attend to my new Operation!
Let Colt’s Teeth, or Decay’d Ones come*
My Pincers quick shall ease your Gum.’

* This line is a reference to youth (Colt’s Teeth) and age (Decayed Ones).

The pain is not always one-sided; sometimes patients gave as good as they got. See, for example, The humorous prints Numbers 21 (Fig.16) *The Country Tooth Drawer* and No. 53 (Fig.17) *The Blacksmith Dentist* in which the female patient pinches the nose of the dentist.

**Versions and variations of images**

**The Hogarth Act of 1735**

The collection has many ‘repeats’ of images. Until the Copyright (or Hogarth) Act of 1735, anyone had the right to make copies, paintings or prints, based on another artist’s design without payment. It was the many pirated copies of his works, from which others profited, that led William Hogarth to campaign for this Act. Prints from all over Europe were freely copied or modified to suit local tastes and customs and this practice continued well past 1735 whenever artists thought that they could get away with it.
Down with your dust. No Cure, no Money.
This is the case for prints Number 17 and Number 18, both after the painting by the eighteenth-century Italian artist Francesco Maggiotto, and mounted together within one frame. Number 18, *Il Cavadenti*, (Fig. 19) by the Italian engraver Giovanni Volpato, is an exact copy of the original design, with the patient kicking out his feet to our right. However Number 17, (Fig. 18) by the English engraver William Humphrey, *Down with your Dust. No Cure, no Money* is a mirror image of the painting, with the patient kicking to our left.
When an artist makes a print of an image, if he wishes it to look like the original, he has to draw the design in reverse. Numbers 17 and 18 (Figs. 18 and 19) are intaglio (cut into) processed prints. Both the mezzotint and the engraving design processes involve cutting into the metal plate; ink is then rolled onto the plate surface; the surface is wiped clean but ink remains in the grooves of the cut lines; dampened paper is placed on top; paper and plate are put through a printing press during which the ink in the lines is pushed onto the paper and then the paper print is hung to dry. The print created is a mirror image of the cut out design. So a great deal of skill is required from the engraver to be able to replicate the image in reverse. Number 17 (Fig. 18) has been produced ‘on the cheap’: it is a copy of Volpato’s engraving, but Humphrey has not bothered to reverse the design when working on the metal plate and the result is that his print is seen in reverse. He has also changed the title and modified the design to include a reference to the celebrated German mountebank Waltho von Claturbank.

Conclusion
In the introduction to the section on pictures in his catalogue Menzies Campbell refers to their historical value and the information to be drawn from them, and comments that: ‘We, of today, may not unreasonably marvel why so many artists favoured grim subjects, which tended to thrill chiefly the curious and the morbid-minded. The explanation might readily be the contemporary social life and habits, with the prevailing cruelty which so many persons tolerated. Besides, the suffering of others was, too frequently, regarded with merriment in a coarse and selfish age.’

The Menzies Campbell pictures are a rich but under-utilised resource and we hope this article will help to bring the collection to the attention of scholars of both dental and art history.

REFERENCES
2. Dr F. N. L. Poynter, formerly Director of the Wellcome Institute of the History of Medicine.
3. All catalogue numbers are listed as HC. J. 16X1...104

David McGowan, Helensburgh, is Emeritus Professor of Oral Surgery, University of Glasgow.
Dr Maureen Park is a Senior Lecturer in the History of Art, University of Glasgow.
During the liberation of Nazi concentration camps, by the Allies at the end of the second world war, many of the former detainees died after eating abundantly within a short period of time after they were liberated. A thousand men died because the Americans and the British were totally shocked and bewildered by what they saw before them. Out of concern, they reacted by giving large amounts of food to the survivors, with no idea of the damage this would do to the frail survivors whose weakened bodies could not digest a normal diet. Once the problem was recognised, they began correcting the situation by setting up field hospitals to feed the sick through a successive gentle series of steps.

Doctor Samuel Glashow was the chief dental officer of the 307th medical company of the 82nd American Aeronautical Division in 1945. In March and April of that year, he took part in the liberation of the Ludwigsruh concentration camp in the North of Germany. Here is his testimony:

‘I have been with the 82nd Division since 1942 and we conducted seven combat missions. Two months before the end of the war, we were occupying Ludwigsruh where the German army had been before. My superior and a dental officer, Major Works and I decided to go and see the infamous concentration camp. What we saw was beyond imagination. The detainees were so skinny. They looked like living skeletons. The smell grabbed you by the nostrils. It was a smell of meat, and lifeless corpses. Near the army camps, corpses crammed together were decomposing.

Fighting on the battlefield for months, I had seen many people dying in front of me and many fellow countrymen suffering from exhaustion. Once, I saw an officer having his face shattered by a piece of shrapnel. I also treated thousands of soldiers from my division or others, and even German soldiers. I had seen blood and guts… and yet, nothing had prepared me for this. I walked on men’s faces, human faeces and pieces of meat scattered everywhere. The smell was unbelievable. I could not believe my eyes.

Then our doctor suggested that we made a sort of soup. We [served it to the prisoners] making sure they would dip some bread in it. Then we also gave them some chocolate before making them eat more normal food. With my 300 men, we had to manage more than 5,000 prisoners.

Our General, General Gavin, was so angry that he asked to fetch the inhabitants of the neighbouring village. He compelled them to help us burying the dead and escorting the survivors to an hospital. The bodies were transported with old parachutes and were buried in individual graves with a cross on them. We made two hundred of them.

We had to guard the prisoners that the division had taken. To guard a hundred of the Wehrmacht soldiers, only one or two soldiers were needed. However, to guard an SS, one guard [per prisoner] was needed. Even after they surrendered, they remained as dangerous as rattlesnakes. We did not have enough food rations to feed them. Consequently, they were given little amounts of food so that they would not die.

When I arrived at the division, I was the dentist with the lowest rank. There were 16 dentists above me, including Major Works who was the dental-surgeon in charge. When he was upgraded to chief dental officer of the 82nd division, I became the dental-surgeon in charge. His work was administrative and mine, more active. On the battlefield, my duty was to take care of and protect the casualties.

Doctors wearing the Red Cross sign on their helmets were often executed by the Germans. One day, General Gavin gathered the medical team and told us: ‘It is your choice to wear the Red Cross sign on your helmets. If you do, you cannot bear arms. If you do not but you wear other medical badges, you can bear arms.’ From then on, 95% of the doctors took their badges off and bore arms until we arrived in Berlin where we were asked to give them back.

Our duty was to prevent the SS from escaping and to make sure that the Wehrmacht soldiers received a subsistence level of food. It was also to check whether the survivors had enough to eat and whether they also received the appropriate medical attention. I never treated them. I did not have the right equipment for that on the spot but their teeth were horrible. [Given the situation] that was understandable. [An assistant was appointed to help me.] He was a Corporal. We treated these prisoners as long as we could and then, the other Allied armies arrived and we handed them over. One morning, trucks arrived to fetch them and we gave them blankets, clothes and something to eat.’

1 The Foundation of ‘International Dental Aid’ After World War II
by Xavier Riaud

2 Dental History Magazine Vol 6 No 2
Enlisted as a volunteer, Captain Samuel Glashow³ was demobilized in 1946. Another practitioner, a Dr Stroweis,⁴ who worked in association with a field hospital which had been set up by the Americans, recalls:

‘We got some medicine from a German dental surgeon that we did not know. He spoke highly of it and especially of being very effective against buccal mucosal infections: tincture of Myrrh. We used it for numerous cases of gum disease, stomatitis, etc.

The relief pain was always quick and the recovery was surprisingly fast. It is fair to say that, meanwhile, the... [patients’] general state of health physical and mental] had totally changed. The application of tincture of Myrrh significantly helped [in] curing the sick but the tremendous improvement of living conditions unquestionably contributed.’ The International Committee of the Red Cross, recognised that survivors of the camps had a calamitous state of oral health which went hand in hand with their generally poor condition.⁸ The organisation tried its utmost to develop its medico-social activities to help such prisoners of war. Indeed, the matter was considered to be an emergency. The deportees’ cachectic and malnourished state was such that to have any hope of survival, they had to be placed on a progressive feeding programme, immediately; their poor oral state compromised the success of this feeding programme since they could not chew food properly. (From 1941 onwards, the ICRC [International Committee of the Red Cross] had organised dental treatment in the camps. Due to their efforts, 64 dental practices had been set up at various locations to which the ICRC sent more than 5 tons of equipment and supplies.)

Independently of the ICRC, a Dr Joachim designed a dental van and trailer, which constituted a mobile surgical centre. Surrounded with a well-trained team, he went to one camp after the other; treating his Belgian fellow citizens as well as prisoners of other nationalities, including those from countries which had not signed the Geneva Convention. Joachim’s results were so impressive that the ICRC tried to set up a similar scheme of their own. However, during the autumn of 1944, Switzerland experienced a major fuel crisis and the search for another option became vital. The Swiss ICRC which was independent from the ICRC, bought a disused dining car with the support and agreement of the ICRC and the Swiss army. It was agreed that this dining car would be converted into a mobile dental centre which would be at the disposal of the military dental service for the treatment of interned foreigners. This carriage was put into use on
December 14, 1944. Between then, and February 28 1945, about 940 prisoners from all nationalities were treated in this remarkable railway surgery. The results were so impressive that many eminent practitioners decided to become involved in caring for prisoners, deportees and war-ravaged communities.

A great number of candidates applied for this form of dental aid but unfortunately problems developed within the Red Cross itself. The parent organisation of the ICRC, which subscribed to the Geneva Convention could only provide care for prisoners of war, whereas independent committees of the ICRC, could help all war victims. It became urgent, therefore, to create an autonomous Red Cross organization which could rely on professional organisations to support the dental aid programme without invoking demarcation disputes. The solution was the founding of ‘International Dental Aid’ in Geneva on February 24 1945. It was chaired by Dr René Jaccard, a Genevan dentist who set up headquarters in Geneva with delegations in freed countries. It quickly became evident that the support of every national Red Cross branch with its professional and administration resources would be essential for the survival of this major humanitarian project many technical and medical staff were recruited and trained for the new dental centres. This would have been inconceivable without the agreement of the whole profession under the aegis of the Ministry of Health.

The objectives of ‘International Dental Aid’ were the following:
1. To Care for children
For example, in line with Swiss Red Cross regulations, 50 children of French practitioners who had been adversely affected by the war were housed, fed and clothed in Switzerland in addition to receiving dental care.
2. Permanent installations
Permanent dental centres were founded in some areas of France. The ICRC was commissioned by the American Red Cross to manage a considerable stock of donated dental equipment. The aim had been to deliver 24 dental practices to camps in Germany but the end of the war meant that this equipment could be distributed to dental care centres in the freed countries.
3. Mobile installations
These evolved from the original railway dental carriage. They were very spacious internally and could be converted into two big compartments, one for oral surgery and conservation, and the other as a Prosthetic Laboratory. The whole carriage was well fitted out with equipment for sterilization and radiology. At the instigation of the Swiss Red Cross, a general appeal was issued for people to donate their old dentures, to be reprocessed and reused by war victims - more than 800,000 teeth were collected.

Today, in 2012, ‘International Dental Care’ still operates in underprivileged countries with the same objectives - the oral rehabilitation of the young.

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References
2. The Americans who signed the Geneva Convention of July, 27th 1929 were convinced (due to the fact that they misread its text) that the convention forbade all medical officers, who wore the Red Cross sign, to bear arms which is inexact. Indeed, the medical officers are allowed to bear some to protect the sick and their staff. However they cannot use them to attack their enemies.
6. Cf. USHMM, photo 10113, 2003, © USHMM.
7. Cf. USHMM, photo 261445, 3003, ©USHMM. Buchenwald camp was liberated by the Americans on 11 April 1945. About a thousand Jewish children were released, of Eastern European origin.
9. Ibid.
10. Ibid.
11. Ibid.

Bibliography and References supplied by the author.

Author: Xavier Riaud, Nantes, France.
I had to drag the large oxygen cylinders up a flight of stairs...

Plaster, Wax and Hot Metal

The Reminiscences of Fred Longrigg, Dental Technician

April 1949. I walked into a dental lab for the first time. Lots of new smells; plaster, wax, acids and hot metal. I was starting my training as a dental technician. The National Health Service had got under way in 1948. The lab shelves groaned with the weight of cast impressions, three deep around the plaster room, which was a large room holding polishing lathes, flask presses, boiling out pan, flasks, and all that was needed to process dentures in acrylic and vulcanite. The practice, was owned by Mr Stanley Barron of Carlisle. It had three surgeries, one was used by Mr Barron and the other two were reserved for assistant dentists, usually two who were apt to change every few months.

Mondays, Wednesdays and Saturdays were general anaesthetic days or ‘gas days’ as they were called. On those days, semi-conscious patients filled the recovery room and the wide staircase. Each of these mornings I had to drag the large oxygen and gas cylinders up a flight of stairs into the main surgery in order to be ready for all the extractions to be carried out throughout the day - often full clearances.

Each lunchtime and at the end of the day, I had to empty the bins of teeth and bloody swabs. We worked from 9am to 6pm, heads down, no tea breaks, with an hour for lunch. On Saturdays, the hours were 9am to 4pm. You didn't leave the workplace until you were told you could do so by the head technician.

On Saturday mornings, after all the day's work was done, it was the big clear down, the yard was Washed, plaster traps cleaned out, the plaster room scrubbed down, also the benches and floors. The setting up room benches were waxed. All the equipment was polished until it was bright and shining, and sometimes the windows were also cleaned. I had to wash and polish the practice owner's large car. Each Friday morning I cleaned his golf clubs and his golf shoes. His day off was Thursday. The other two dentists had Saturday afternoons.

Each gas day there was a doctor in attendance. In the lab there was a head technician and two other technicians plus one other apprentice and myself. All the technicians had served in WWII in a number of countries - Ireland, India, Africa and the Far East. One had been a navigator in the RAF, and one a tank commander. The head technician was very skilled and once he saw I was keen to learn he took time to teach me the skills and methods I was required to learn.

The lab had a large plaster room, a large setting up room seating four, a metal casting room, a porcelain room where the crowns were made. No temperature gauge, but melting cones which bent over when the required temperature was reached, you viewed them through a peep-hole. In the yard there was a shed holding the vulcanite boilers and curing pans.

We cast gold crowns and inlays and undertook a deal of orthodontic work, so there was a lot to learn. The other apprentice and I attended night classes Monday and Tuesday after work. Physics and Chemistry and on Thursday we travelled by
rail 50 miles to a dental school to undertake our City and Guilds, so the weeks were full. My weekly pay for the first year was 15 shillings (75p) with 10p off for my stamp. I cycled to and from work, 3 miles each way, suffering many soakings on cold mornings and wild winter nights. We returned home on the Thursday around 10 pm leaving at 7 am in the morning. A long day with a three mile walk morn and night, to and from the station.

**Vulcanite Boilers in the shed sprayed a sulphur-smelling mud**

Acrylic resin dentures were just becoming a reliable method. Some of the earlier acrylic resins did very funny things after curing. Vulcanite dentures were still made, this a time-consuming method requiring heat and pressure. The vulcanite boilers were out in the shed. They could blow off, spraying the walls with a sulphur-smelling mud. When you deflasked vulcanite dentures the plaster was soft and smelly. All finishing was done with small files and squares and half rounds, followed by sandpapering; no hanging motors or hand chucks.

Packing vulcanite dentures took a deal of time. The sheets of vulcanite had to be heated on a glass plate over a water tank. Vulcanite dentures had to be flasked differently from acrylic dentures. The vulcanite sheets came in a number of colours - reds, pinks, browns and a black with flecks of gold. This was white before curing, one of the technicians made the palate of his part-denture in all the colours to hand. Vulcanite dentures were often repaired with acrylic. All repairs needed flasking and packing. There was no quick cure in those days. When using porcelain anterior teeth on the acrylic dentures, it was easy to crack them along the pin-line when deflasking. The plaster was hard and you only had a plaster knife and a coping saw. No model trimmer was available at that time.

The practice owner took his full impressions first with compo and then this was keyed to hold the plaster wash made with alum water which caused the plaster to set quickly when removing the impressions material from the cast impression it could be quite a job when it was a fine-edged lower model. The compo had to be washed and cleaned of any plaster before returning it to the surgery, and the impression trays polished.

We used both the simple hinged articulators and also adjustable articulators. The wax bites were all made with base plates for both full dentures and part dentures. Great care was taken over the setting up and articulating paper used for the preliminary grinding when dentures were fitted at the chair-side. We would often be called to the chair-side to be shown what adjustments were required. All part-dentures were surveyed for the path of insertion, which was also explained to the patient when the denture was fitted. We also provided immediate dentures, which were fitted on the day the teeth were extracted. I always enjoyed making these dentures taking care to measure the teeth angles and lengths, and also their colours.

**Orthodontic work was a great pleasure**

Over the years, you received instructions in all the processes undertaken; casting crowns and inlays, making special tray cast in metal, large ones for taking the impressions for a cleft palate. The work I most enjoyed was the orthodontics.

As the volume of work increased, we later received hanging motors and hand-pieces - hand filing and so on, just couldn't keep pace with the amount of work passing through the lab. The technicians worked paid overtime but we apprentices didn't get paid for any overtime we undertook. It was expected that we made up for the time we had off to attend the dental school on the Thursday. I had to take the day's post to the main post office each afternoon, and at the end of each month, I had to cycle around the city, paying the monthly accounts. It always seemed to rain on those days, and sometimes I was sent debt-collecting. You were taught to make the best job possible, so the patient received a satisfactory denture. Orthodontic work was a great pleasure when you saw the results it made to a child's teeth over a number of years.

I was fortunate to learn my trade in a busy practice where a forward outlook prevailed, and also a sound grounding was laid down by both the technicians and the dentists I worked with. Enjoyable years. Hard work, but lots of laughs, even when cleaning cars and the golf clubs. All a learning curve.

Author: Fred Longrigg
In one of his official documents, The Capitulare de Villis, the great French Emperor Charlemagne (747-814) lists and recommends the medicinal plants which had been used by Theophrastus the Greek philosopher and botanist, author of the History of Plants (a series of ten books which made him the greatest botanist since Antiquity). (Lamendin, 2008).

According to Theophrastus, almond oils and products were appropriate carriers for various oral concoctions. Anise and cinnamon were good for the equivalent of oral aromatherapy. Cinnamon was thought to be particularly helpful for oral infections and dental abscesses. He also used gum arabic from acacia as the base for medications. Hyoscyamus was prized as an analgesic for dental pain and the flour of flaxseeds for its anti-inflammatory action when applied in poultices. Theophrastus also recommended the use of alexanders for gingival lesions caused by scurvy, horehound (Marrubium) to cure fever, poppies for dental pain, black pepper for dental cavities, liquorice for its antibacterial and anti-inflammatory qualities, red roses whose astringent petals were used for mouthwash, poppies for their soothing effects, emollient mallow for mouthwash and hypericum for its sedative action.

The genesis of the Capitulare

It is said to have been written by Alcuin, one of Charlemagne’s most prominent scribes. Alcuin had met the king in Parma in 781 and remained at his side from 782 to 790 but he left Charlemagne’s court in 790 to return to England, his native country, where he lived until 793.

When he returned to Charlemagne’s Kingdom, Alcuin became abbot of Saint Martin of Tours in 796 and settled in Tours in 801. In addition to his duties as abbot, Alcuin taught botany, pharmaceutics and agriculture. In 796, Charlemagne apparently asked Alcuin to write a text aimed at regulating the cultivation of plants. Since Alcuin was already the Emperor’s private tutor and advisor, and had run the Palace School of Aix-la-Chapelle in 782, he was, very well suited for this particular task. It was an extensive time-consuming project since Alcuin had to collect the plants, classify them and check their therapeutic qualities.

Alcuin died in Tours in 804 but the origin of the written works which are attributed to him is still disputed today (Girre (1997). Some scholars believe that the Capitulare de Villis could have been written, by another author, called Eginhard, who was Charlemagne’s chronicler. Although the Capitulare de Villis was promulgated in 812 by Charlemagne, the implementation and diffusion of the document was carried out by the Emperor’s son, Louis the Pious (778-840) (www.encyclopedia-universelle.com, no date given).

The Capitulare de Villis

This long ordinance is composed of 120 capitulae (chapters or articles). The text tackles numerous topics such as the professions, including medicine, but it is mainly concerned with botany (http://fr.
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wikipedia.org (a), 2009. Charlemagne’s aim, using a series of capitularies, was the reform of the agricultural and administrative practice of his large estates, which extended from Germany to Spain. Some of these estates were well known to be very badly managed. Any capitulary from Charlemagne laid down strict rules which were to be followed scrupulously at the risk of heavy punishments (fines, dismissal, imprisonment, even banishment etc.) The emperor’s will as laid down in the document, could not simply be ignored at local level since Charlemagne’s envoy, the missi dominici, delivered the documents by hand and saw to it that the contents were implemented. (http://fr.wikipedia.org, 2009).

Many plants are described in chapters 43, 62 and 70, of the Capitulare de Villis which provides the historian with information on the fruits and vegetables which were commonly cultivated at the time (http://fr.wikipedia.org (b), 2009). Chapter 70 comprises eighty-eight medicinal plants which are exclusively medicinal and quoted by Pliny the Elder (23-79 AD) in his work entitled Naturalis Historiae Libri (books XIV to XXV – 37 volumes in total) and by Pedanius Dioscorides (v. 40-v. 90) in his book De Materia Medica (www.encyclopedie-universelle.com, no date given). Among those plants are some with potent medicinal qualities which were used in oral medicine. It is obviously the case for garlic which has an antifungal and antibacterial action and which alleviates toothache, dill which also alleviates toothache, burdock which is used for mouthwashes against dental pain or mouth ulcers, tarragon which is used against severe toothache in poultices on the decayed tissue. It was also used against scurvy and the associated gingival lesions. Fennel was used as a toothpick to alleviate gingival pain or as a soothing cover for painful teeth. Lily was applied as an antiseptic and poultice on bad teeth and also in mouthwashes. Lovage was chewed to prevent mouth ulcers, mustard was also masticated to relieve toothache and prevent scurvy. Onion was a treatment for ulcers, dental pain or scurvy and oregano was known as a dental analgesic or antiseptic. Parsley was good for decreasing halitosis or dental pain. Common Rue (also known as Herb-of-Grace) was recommended against the gingival lesions associated with scurvy and finally, salvia, which was chewed to alleviate dental pain and combat oral infections and those of the mucous membrane (Lamendin, 2007).

Conclusion
Before Charlemagne, medical education was based directly on the knowledge of Gallo-Romans. Before the constitution of medical schools, medical lore was transmitted from master to student in monasteries by clerics or in towns by unaffiliated doctors. Conventional medicine originated under Charlemagne and for three centuries afterwards, every monastery had its own medical school for monks and clerics. However, the instruction in these schools was not only theoretical as the monk-doctors were also practising physicians. (Baron P. & Baron A., 1986). Girre (1997) added: ‘Charlemagne created numerous religious schools where the study of plants was the main basis for pharmaceutical teaching. Until then; only the monks, and especially the Benedictines, treated the sick.’ Charlemagne’s main purpose in promulgating the capitularies was the reform of agricultural methods and the administration of his estates. Nevertheless, the Capitulare de Villis also stimulated the practice of medicine and the large scale production of therapeutic plants. Since, to some extent, the capitulary also highlights the use of certain plants for dental conditions, we can consider that this unique text is also a fundamental document in the origins of the use of plants in the treatment of oral pathology.

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Many thanks to my great friend and colleague, Henri Lamendin, for his support and valuable advice.

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The Dog and the Doctor
Joseph Denovan Adam RSA, RSW (1842-1896)

Joseph Denovan Adam was known for his paintings of wildlife. In this picture, a 19th Century country practitioner, who at that time, would have carried out both medical and dental treatment for his patients, rests with his faithful dog after a day’s work.

Adam founded a school of painting at Craigmill, near Stirling.

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