

I have the impression that I wrote to you only recently but time passes so quickly that it is a full year ago - a year in which we have been active as usual. You will be able to read in the following pages short reports of our meetings and the various communications that were presented. To those of you who attended the meetings the contents will be a reminder of pleasant and instructive moments spent together, and to those who were not with us the reports will, I hope, be an enticement to join us in the future.

Our next meeting will be at 64 Wimpole Street on Wednesday 25th October 1978 when Miss Jessie Dobson, who was for many years the Curator of the Hunterian Museum of the Royal College of Surgeons of England, will address us on the ways in which John Hunter's research was continued by others into the 19th century. It should be an interesting meeting and I hope you will come and bring others who might be glad to attend as guests.

Your committee has been engaged for the past few years on compiling a Centenary History of the British Dental Association. This will shortly be delivered to the publisher and we shall have news of its availability this time next year.

Ivo Vinski, Chairman

COMMITTEE 1978-1979

Chairman : I. Vinski, L.D.S.R.C.S.
Hon. Sec. : E.M. Spencer, M.B.E., B.A., A.L.A.
Hon. Treas.: J.D. Walter, D.D.S., F.D.S.R.C.S.
Committee : R.A. Cohen, L.D.S., F.F.D.R.C.S. Irel.
 J.A. Donaldson, B.A., F.D.S.
 F.T. Horrocks, L.D.S.R.C.S.



DATES FOR YOUR DIARIES

The Annual General Meeting of the Club will be held on Wednesday, 25th October 1978 at 5.30 pm, followed by a lecture by Miss Jessie Dobson, latterly Curator of the Hunterian Museum of the Royal College of Surgeons of England. Her title is: 'The importance of the teeth is such that they deserve our utmost attention', a quotation from John Hunter's writings. She will give an account of the continuation of Hunter's work during the 19th century.

On Saturday, 7th April 1979 at the B.D.A.'s Annual Conference in Cardiff, Mrs. Brenda Fox and Mr. Ian H. Maddick will provide a demonstration of the historical dental health education material they have painstakingly collected over a period of years, and they will give a joint lecture on William MacPherson Fisher.

In June 1979 we hope to arrange for a speaker about the history of the dental auxiliaries. Further details will be given nearer the date.

AN INVITATION TO MEMBERS

The President and Council of the Odontological Section of the Royal Society of Medicine have invited members of the Lindsay Club to a meeting of the Section to be held on Monday, 26th March 1979 at the Royal College of Surgeons at 5.30 pm. Under the general title 'The Collectors' the speakers will be as follows:-

Dr. J. Kent, Curator of Coins at the British Museum, whose talk, Portraits of Power, will explain the implications of using heads on coins and vases;

Professor A.E.W. Miles, Hon. Curator of the Odontological Museum at the Royal College of Surgeons, who has chosen the title Curating in the Outer Hebrides;

J.A. Donaldson, Hon. Curator of the B.D.A.'s Museum, speaking on Teaching Material of the Past.

LINDSAY CLUB MEETINGS, 1977-1978

At the 15th Annual General Meeting of the Club on 17th November 1977 tribute was paid to Leslie Godden whose death had occurred during the year. The Committee was unanimously re-elected, there having been no resignations nor nominations. Two new members were welcomed, Dr. Shirley Hughes and Mr. S. Gelbier. Mr. Frank Horrocks gave a lecture-demonstration on the subject of historical microscopes.

The 45th meeting of the Club was held during the Association's Annual Conference at Birmingham on 16th April 1978 with Mrs. Christine Hillam as the speaker. We were pleased that guests on this occasion outnumbered the members. Afterwards Mr. R.A. Cohen kindly entertained members at his home in Leamington where he had arranged a wonderful display of books and examples of objects of dental interest from his fine collection.

On 22nd June 1978 a joint meeting was held at the General Dental Council with the Society for the Social History of Medicine in honour of the centenary of the passing of the Dentists Act 1878.

Full accounts of all these meetings will be found in later pages of this Newsletter.

Interesting Historical Microscopes: a demonstration

F.T. Horrocks

At the 44th meeting of the Lindsay Club on 17th November 1977 Mr. F.T. Horrocks displayed many historical microscopes from his personal collection. He explained that although the microscope existed as early as 1600 it remained in obscurity until the second half of the 17th century when Swammerdam and Leeuwenhoek in Holland, Malpighi in Italy and Grew and Robert Hooke in Britain were using and making simple and compound instruments, encouraged in this country by the Royal Society. These microscopes and the imperfect preparation of materials for examination left much to be desired and it was not until the 19th century that real improvements were effected, though John Dollond had introduced the telescope object glass which cured chromatic aberration as early as 1758.

Joseph Jackson Lister studied the achromatic objective made for Dr. C.R. Goring of Edinburgh with whom he had worked, and investigated other British and Continental lenses, from his conclusions formulating the sine law. Lister passed on the method of making achromatic objectives and several businesses undertook their production; these microscopes were used by Nasmyth, Tomes and Lintott, and further improvements were made, notably the homogeneous immersion lens of 1878 suggested by an Englishman, J.W. Stephenson, and produced by the firm of Zeiss. This gave greater resolution of detail, using cedarwood oil between the cover glass and the front lens of the objective to allow a wider angle of light to enter the system. Cedarwood oil had the nearest refractive index to glass.

A 20th century development originating with Frits Zernicke in the Netherlands was phase-contrast using variations of refractive index which are converted to visible differences in amplitude. This at first had a hostile reception in Jena from Carl Zeiss, from the Royal Microscopical Society and from the Quekett Microscopical Club, but in 1953 Zernicke received a Nobel Prize for physics in recognition of his work.

Mr. Horrocks continued his lecture by showing a number of slides of historical microscopes from Leeuwenhoek's onwards, and illustrations of the specimens seen through them. One slide depicted the histology lecture room at the Royal College of Surgeons where John Quekett was professor and conservator of the Hunterian Museum. The evening concluded with a demonstration of a number of mounts and early slides, the intrigued audience being permitted to examine between 20 and 30 microscopes kindly brought by the speaker for the occasion, together with books of the period which showed their contemporary use in science.

An Investigation of the 19th century Liverpool

Dental Practice

Christine Hillam

Mrs. Hillam's interest has been stimulated by the flamboyant advertisements of dental practitioners in the 18th century, particularly by those of James Blair who spent the last ten years of his life in Liverpool. The Dental School in Liverpool has been given the records of the practice founded by Blair's last partner, Thomas Whitfield Lloyd, who was born in Liverpool in 1793 and worked for his father, a cutler and surgical instrument maker, until in 1816 or 1817 he entered James Blair's practice in Bold Street, continuing the practice

after Blair's death in December 1817 under the name of Blair and Lloyd for the benefit of himself and Mrs. Blair. The latter in 1823 took another partner and Lloyd began his own dental practice at 59 Bold Street, also continuing to visit Chester and Shrewsbury as Blair had done.

Richard Lloyd joined his father in practice in 1841, the practice being known as Lloyd and Son from 1843; Thomas Whitfield Lloyd while continuing to work in Liverpool moved his residence to Birkenhead and in 1847 retired, dying in 1861 and leaving nearly £14,000. His sons Richard and James Blair Lloyd practised in partnership and took an interest in the new dental hospital, established in 1862, where James in 1866 became an honorary dental surgeon. Richard Lloyd died in 1864 and James moved to Rodney Street where from 1866 he was assisted by Charles Alder who also was associated with the dental hospital.

During the 1860s the number of dentists in Liverpool rose from 42 to 60, among whom James Lloyd seems to have been well regarded. His nephew, Edward James Montagu Phillips who joined the practice in 1875 was the first member of the family to become a qualified dentist, having studied at Liverpool Royal Infirmary and St. Thomas's Hospital and qualified M.R.C.S. in 1874 and L.D.S. in 1875 at University College Hospital, London. He held various appointments in the dental hospital and school and was a member of the British Dental Association the British Medical Association, the Liverpool Medical Institute and the Odontological Society, to which he contributed several short communications. He was a founder member of the Liverpool and District Odontological Society. James Blair Lloyd, who died in 1896, left everything to his nephew who continued to practise under the name of Lloyd and Phillips; after his death in 1918 the practice continued as Lloyd, Phillips and Hallam for a number of years, and then Samuel Hallam practised under his own name until 1960.

The surviving records of this practice, a dental tradition of nearly 140 years, comprise sixteen books: two account books for 1865-1870, the practice's accounts with Claudius Ash from 1862 to 1892, an appointment book from 1906, a workshop book for 1922-1926 and nine daybooks, cash books, etc. from the 1930s. The practice accounts and Ash's accounts have been analysed, covering 1865 until 1870. Some of the practice entries list treatment in detail, the dates presumably recording the completion of a course of treatment. Less detail is available for the later years.

The 247 patients in 1865 fall into two groups, 152 (62%) coming from Liverpool and 82 (33%) from outside the city's boundaries; the rest were listed without addresses. Nineteen of the account holders came from more than ten miles beyond the city and have not yet been investigated, but 106 out of the 154 account holders have been identified. Of these 35 were merchants, 12 brokers, 12 tradesmen, four in banking; 21 were of independent means. Three accounts were held by convents, one by a school, two by servants sent by their employers, two by lawyers and four by clerics. There were also two agents, two book-keepers and one surgeon, veterinary surgeon, shipping master, farmer, architect and artist. The number of individual patients remains fairly constant with a substantial and unexplained increase in 1870; the percentage of adult males varies from 19% to 28%, of women from 31% to 45% and of children from 22% to 50%.

In 1865, the most detailed year in the records, there were 664 items of treatment, the most advanced operations being one pulp treatment with arsenic, three root fillings and four pivot crowns. Ten orthodontic cases, eight boys and two girls, were treated but no particulars are provided. There were 135 extractions, each costing 5/-, in 69 patients; only 17 administrations of chloroform were given, mostly to men. Other extractions would, of course, have been done in the prosthetic cases.

Restorations seem to have a preponderance of gold leaf and foil fillings amounting to 198 fillings in 77 patients at a standard fee of 10/6. Lloyd also performed 96 'cement' fillings at 7/6 each, presumed to have been done with 'osteo-plastic' zinc oxychloride cements, in 49 patients. Since Lloyd purchased neither amalgam nor mercury from Ash he either got supplies elsewhere or used other substances, possibly gutta percha of which he bought a considerable quantity. In 1865 Lloyd did 107 'fillings' at 10/6 each in 33 patients. Restorations comprise between 32% and 60% of the total number of items in the records, and were done for 48% of the patients.

Prosthetics cases numbered 33: 17 complete dentures, seven uppers, four lowers and three other appliances. Apart from two on gold plates, eight of vulcanite and two with gold uppers and vulcanite lowers, for the largest group consisting of thirteen sets, one partial lower and four uppers, no material is specified. Probably they were of vulcanite since 6 lbs of vulcanite and 5 lbs of gutta percha were bought in one year plus 800 teeth of which at least 600 must have been used for new dentures. Generally Lloyd charged 25 gns for a gold denture, 20 gns for vulcanite and 10 gns for separate uppers and lowers. In addition 48 repairs were done during 1865, including springs, swivels and extra teeth.

Lloyd's income from his professional activities can be estimated, since accounts are often marked 'Paid' and dated. Bills seem to have been sent on the quarter day after completion of treatment; some were not settled for a number of years and then only after recourse to a debt collector. Lloyd's annual income seems to have been about £820 per calendar year, and in 1868 was as much as £890. The financial arrangement with Charles Alder is not known. In 1868 Lloyd spent £140 with Ash including a Morrison chair (£40) and gas apparatus. Lloyd was therefore comfortably off, comparing his income with the average skilled craftsman's of £100 per annum and the agricultural wage of £35 per annum, but not as wealthy as a doctor in a fashionable practice whose earnings would be up to £2000 per annum.

Many questions are posed by this analysis which are insoluble because the information is not present in the records. For instance, had appointments been recorded one could have deduced how many patients were seen in a day, how many days in the week Lloyd worked, and how much treatment each patient tolerated in one visit. It is impossible to judge the state of dental health of the patients without more detailed records such as charting. Although we know that Lloyd had as patients some of Liverpool's leading families, others may have preferred Manchester or even London when seeking dental treatment, and one cannot tell how many people in Liverpool could afford treatment from a dentist or whether Lloyd attracted his fair share of them. It also proved tantalizingly impossible to deduce Lloyd's techniques and preferences from which his standing as a dentist might have been assessed.

However, the analysis - which is continuing - has revealed the size of a 19th century practice and the social status of many of its patients, the income of a provincial dentist and his range of fees, and the proportions of the different types of treatment.

The Cohen Collection

A very pleasant event followed the Birmingham meeting of the Club, when Mr. R.A. Cohen kindly arranged at his home in Leamington a selection of books and items from his collection of dental objects for members to study and admire.

The books he had selected from his extensive library were chosen because of their interest, beauty or rarity and because only one is included at the British Dental Association Library. The oldest was the Libellus de Dentibus by Bartholomaeus Eustachius, published in Venice in 1563 and bound in 17th century calf with gilt spine bearing the device of Nicholas Foucault (1615-1680), indicating that it was purchased by the Jesuit College library from funds given by Foucault. He was Surintendant des Finances to Louis XIV. The Libellus was the first dental book published in Italy and the first important work on dental anatomy. Although available in German and Dutch, it has yet to be translated into English.

Next in order of age came two of Anthony Leeuwenhoek's works. His Microscopical Observations of the Structure of the Teeth, published as an excerpt from the Philosophical Transactions of the Royal Society of July and August 1678, is important in that it has the first illustration of enamel prisms; his letter from the same publication dated 20th May 1684 was the first to illustrate bacteria.

The one book also found in the library of the British Dental Association was Fauchard's Le Chirurgien-Dentiste, of which a particularly fine copy was displayed of the 2nd edition of 1746. It must be the most famous of all dental books.

All the other books shown dated from the 19th century. Four were from the continent of Europe. El Dentista de si Mismo by Don Jose Leon, published in Madrid in 1849, had been a presentation copy to the Duke of Montpensier and bears the dedication "A S(u) A(lteza) R(eal) El Duque de Montpensier" in gilt on the upper cover and the royal arms of Spain on the lower cover. The book is bound in maroon calf with gilt decoration. Leon was dentist to the Spanish royal family. The Duke of Montpensier had married the Infanta, sister of Queen Isabella, in 1846 hoping thereby to become ruler of the country but the queen was forced to abdicate and was exiled to Paris. The book was acquired from the library of the duke's grandson. Perhaps the rarest dental book of the 19th century was on show: Retzius' Mikroskopiska Undersokningar ofver Tandernes. This was published in Stockholm in 1837 and Ronald Cohen's copy was presented in 1842 to a Dr. Anderson of Edinburgh. The third European book, also of Scandinavian origin, was Zadok Fraenkel's Om Tanderne, published in Copenhagen in 1817 and believed to be the earliest Danish dental book. It is extremely rare. The author may have been the father of Meyerus Fraenkel who, under the auspices of Purkyne, in 1835 published in Bratislava De penitioni Dentium. Finally in this group was shown the very rare first edition of a book published in Paris in 1836, W.H. Mortimer's Observations on the Growth and Irregularities of Children's Teeth; according to Dagen Mortimer was a relative (perhaps son-in-law) of De Chemant.

Two other books with European connexions were on view. Edward Brehm, a native of Germany, had practised in Dublin and Cork as well as in Edinburgh where in 1824 the 5th edition of his Treatise on the Physiology and Diseases of the Teeth and Gums was published. The copy in Mr. Cohen's library is bound in red morocco and gilt with the coronet of the Duke of Sussex on its upper cover. Brehm may have practised chiropody as well as dentistry, since he illustrates in a pamphlet an instrument for extracting corns. Eleazar Parmly made a presentation of his book, Thoughts in Rhyme, to 'the beloved Queen of Holland'. This work, published in New York in 1867, contains accounts of Parmly's travels and visits to dental practitioners.

The last book displayed came from the library of Charles Singer, the eminent medical historian. This was Charles Hunter's work On the Speedy Relief of Pain, published in London in 1865. Hunter was the originator of the term 'hypodermic'.

In addition to this bibliographical feast, Ronald Cohen had chosen a wealth of examples of artistic dental objects from his superb collection. A selection of ceramics included a copy by Sampson of Paris, c. 1890, of the famous Meissen dental group by J.J. Kandler (1706-1775). Other groups included the one entitled 'A long pull and a strong pull', a Continental fairing of the late 19th century. Modern figures were also represented, the most appealing being a small child holding his face, an example of Copenhagen porcelain. Also among the ceramics were Liverpool tiles and a Leeds mug with transfer decoration, the latter showing plate 6 from Tim Bobbin's well-known *The Human Passions Delineated*. There was an ink well in the form of a bear extracting a tooth from another bear by or after Christoph Fratin, the French amaler, impressed with his initials and thought to date from about 1850. Spittoons, toothbrush containers for washstands, a Royal Doulton water jug made for Claudius Ash and a toothpick holder in the shape of a porcupine completed the ceramic display.

A small selection of dental instruments was shown, comprising examples of pelicans, forceps and keys of the 17th, 18th, 19th and early 20th centuries and including upper molar forceps by Evrard. There were a dental drill of the Archimedean type with an ivory handle dated about 1850, a gum lancet of about 1870 with a tortoiseshell handle and scaling instruments of approximately 1780 in the original shagreen case. A number of advertising tokens was shown, the earliest, of copper, dated about 1720 and used by Blunt of Windmill Street, London. Materials employed in making these tokens included brass and gilt and both English and French dental practitioners were represented. A gilt medal in its original case was on view that was awarded to O. Taveau by the Societe des Sciences Physiques Chimiques de France, perhaps for his 'ciment oblitterique'.

Among the most attractive objects were the 20 toothpick cases from 1780 to 1880. These were beautifully fashioned in ivory, silver, silver and silver-gilt filigree, tortoiseshell, shagreen, horn and wood, many inlaid with gold, silver, mother-of-pearl or tortoiseshell. They display the most exquisite craftsmanship.

The other decorative objects displayed in such numbers included modern badges showing St. Apollonia, babies' first teeth mounted as brooches or tiepins, snuff or tobacco boxes in papier-mache depicting dental scenes on their lids, some after Tim Bobbin's plates, early 19th century etuis containing toothpicks and other articles, and five silver chatelaines with toothpicks, one particularly fine one of about 1780 of Chinese origin also having a shovel-shaped tongue-scraper.

The history of the toothpick could be traced from 30 examples from between 1700 and 1910 in gold, silver, ivory, mother-of-pearl, bone, tortoiseshell and wood, Eastern, Continental and English. Two of the bone ones were made by Napoleonic prisoners-of-war. There were also four toilet sets, three dated about 1800 and originating in the Netherlands, and one from North Africa, date unknown. Fifteen examples of tongue-scrapers were displayed, in silver, silver and ivory in various patterns, tortoiseshell and ivory, and plastic, ranging in date from 1750 to 1975. The evolution of the toothbrush was illustrated by ten examples from 1795 to 1900 in silver, ivory and bone, one silver example hallmarked 1795 being double-ended. A fine silver-gilt toothbrush was made by John Douglas of London in 1815; another bore the Paris hallmark for 1798 and the Naples import mark of 1800-1810. Of six toothbrush holders of between 1829 and 1910 in silver, bone, ivory and celluloid, the silver one was made in 1829 by Archibald Douglas of London.

Perhaps the silver objects were the pick of the Exhibition as far as the artistic eye was concerned. There were ten Continental toothpick holders, mostly hallmarked, of the latter half of the 19th century; these included two particularly fine examples in the form of flowers. Of much earlier date were three combined spoon and fork sets with a toothpick in the handle. These were used before table

forks were commonly available and are all extremely rare, dating from the first years of the 17th century and all bearing Continental hallmarks. Three red morocco travelling cases completed the display, all from the 1790s and made with exquisite workmanship and 'bright' cutting, two from Birmingham and one from London. Each contains a toothbrush with a silver handle, a toothpowder box and a tongue-scraper.

Mr. Cohen had taken such immense care and trouble in arranging and labelling this wonderful selection from his treasures, but the appreciation of his guests was unfeigned and one hopes that he felt rewarded as he deserved for the interest and pleasure everyone derived from the visit.

The Centenary of the Dentists Act 1878:

a joint meeting

The 46th meeting of the Lindsay Club was held on 22nd June 1978 jointly with the Society for the Social History of Medicine, in honour of the centenary of the Dentists Act 1878, the General Dental Council being the host for the occasion. J.A. Donaldson opened the evening with a paper entitled 'Factors that Prepared the Way for Dental Reform' in which he traced the effects upon dental practice of improved communications, Britain's leading position in trade and industry, technological developments and scientific progress. He showed how the formation of learned societies broke down the suspicion between practitioners and encouraged the circulation of news and knowledge, and how this growing unity enabled dentists to give moral and financial support to those of their number who were attacked through litigation.

N. David Richards followed with a paper 'Final Chapters in the Campaign to Effect Dental Registration (1875-1878)'. Compulsory registration and dental education had been sought by individuals since the 1840s but few practitioners had gained the L.D.S. and those who had qualified found it a disadvantage to be unable to advertise. Provincial meetings of dental practitioners were held and several small associations were formed of which the Dental Reform Committee became pre-eminent and drafted the Dentists Bill which after much controversy especially with the members of the medical profession became law on 22nd July 1878.

The Bill was proposed by Sir John Lubbock, whose grandson, Lord Avebury, was the last speaker of the meeting and gave a lively account of a man now little remembered but in his day highly regarded. Sir John was a banker with strong scientific interests fostered by Charles Darwin; he became an F.R.S. at the age of 24 and never ceased to promote the cause of scientific study. After his election as Liberal M.P. for Maidstone in 1869 this was one of his aims, together with adult education and the shortening of the hours of labour. He is still remembered for the introduction of bank holidays. By 1880 he had got 11 measures through the House and was still pursuing his scientific and educational interests as President of the Royal Anthropological Society, Vice-Chancellor of the University of London and a trustee of the British Museum. His interest in the Dentists Act probably began because he was a patient of Sir John Tomes who was active in the Dental Reform Committee, and Lord Avebury brought with him the illuminated address presented to his grandfather by the Committee, signed by Tomes and J. Smith Turner.

In throwing a spotlight on three different aspects of the period of Reform, the speakers gave a living dimension to those momentous years.

AUSTRALIA LEARNS DENTAL HISTORY

Dr. Sydney Levine, a member of the Lindsay Club, has taken part in a programme on dentistry lasting over two hours and broadcast throughout Australia on Easter Day, 26th March 1978. Although the emphasis was placed on the painless techniques now available in practice, Dr. Levine was able to introduce historical comment by describing the development of prosthetic and operative dentistry and of anaesthesia. Opening the programme by reading early Australian dental advertisements, the presenter of the documentary, Tim Bowen, then interviewed dentists in their 70s and 80s who recounted their training and practice experiences: one was still working at the surgery in Sydney which he had established in 1919. The audience received an impression of the way in which dentistry had developed from crude beginnings to modern practice.

Dr. Levine has this year been appointed Curator of the historical book collection at the Dental School in Sydney where he has given lectures on dental history to the students. He is also honorary historical consultant to the New South Wales Branch of the Australian Dental Association.

LE CHIRURGIEN DENTISTE,

ou

TRAITE' DES DENTS.

OU L'ON ENSEIGNE LES MOYENS
de les entretenir propres & saines, de les
embellir, d'en réparer la perte & de re-
médier à leurs maladies, à celles des Gen-
cives & aux accidens qui peuvent survenir
aux autres parties voisines des Dents.
Avec des Observations & des Reflexions sur
plusieurs cas singuliers.

*Ouvrage enrichi de quarante Planches
en taille douce.*

Par PIERRE FAUCHARD, Chirurgien
Dentiste à Paris.

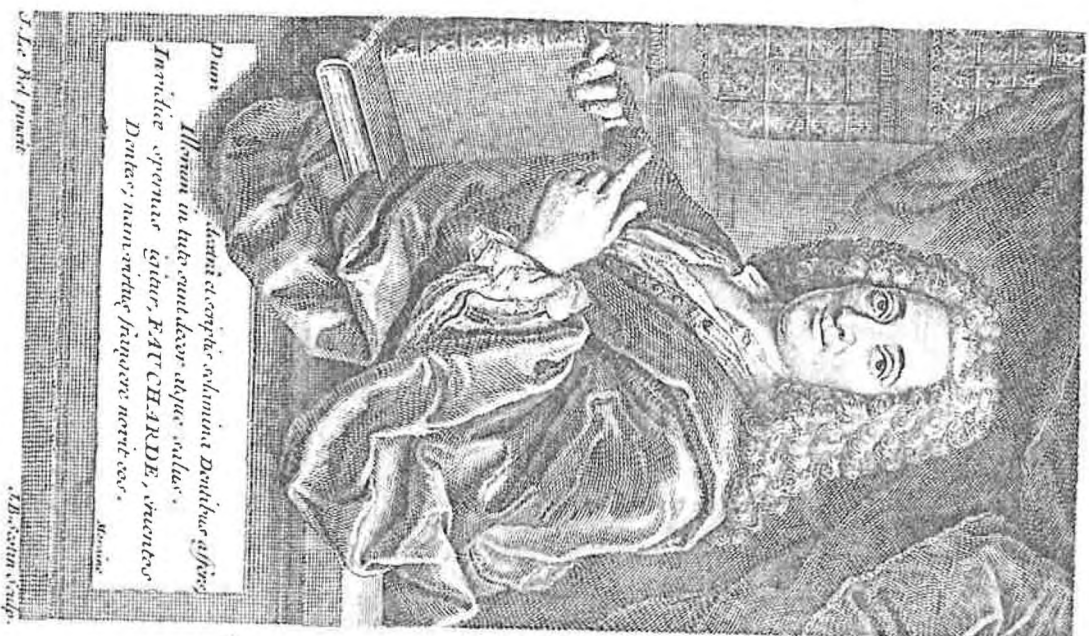
TOME PREMIER.

A PARIS,

Chez JEAN MARIETTE, rue Saint Jacques,
aux Colonnes d'Hercule.

M. DCCXXVIII.

Avec Approbations Et Privilège du Roy.



250 Years of 'Le Chirurgien-Dentiste'

Ivo Vinski

Reproduced here is the title-page of Pierre Fauchard's Le Chirurgien-Dentiste published in Paris 250 years ago this year. The fact that Fauchard's book figures in the splendid catalogue Printing and the Mind of Man (Castle & Co., London, 1867) in which are listed the names and authors of 424 books considered to be the most influential ever printed is a measure of the importance scholars attach to this work. Even if it cannot claim to have an impact on the mind of man similar in magnitude to some of the other books listed, Fauchard's work is certainly a great book, and it had an immense influence on the evolution of modern dentistry and the formation of the dental profession as we know it today.

'Chirurgien-Dentiste', a title which he invented not only for his book but for the occupation he had been engaged in for 30 years, is still in use today and members of the dental profession use it in its various forms and translations. To name a few examples, there are Surgeon-Dentist, Dental Surgeon, Zahnarzt, Tandarts and Medico Dentista.

Fauchard broke completely with the customary jealous secretiveness which prevailed in a trade practised until then mainly by uneducated men and charlatans. In two duodecimo volumes of 802 pages, 61 chapters and 40 plates, he discloses everything he has learnt about dentistry through prolonged study and practice. In a most generous manner he not only instructs his colleagues and the young men who wanted to enter the profession but also the suffering public, and thus he took the first steps to put dentistry on the path of evolution from a trade to a learned profession.

The various branches of dentistry which we know today are elaborated in his book. Fauchard starts by describing the morphology of the teeth, their growth, their structure and their situation in the mouth. He discusses the troubles caused by the eruption and the presence of diseased primary teeth in children, detailing the requisite treatment. He describes at length the various ways to preserve and embellish the teeth and the materials used to fill them. The manner of extraction and the instruments used for this purpose are well illustrated and described, and with compassion for his patients he tried to improve the pelican by padding the part which pressed against the alveolar ridge. The chapter on dental hygiene is almost modern in outlook in the methods suggested. For the regulation of malpositioned teeth he uses, for the first time appliances consisting of silver or gold platelets in conjunction with silk ligatures which were the precursors of our wire arches. In the 40 plates in the book, he depicts many instruments which he used in practice and either invented or improved. He takes great pains in describing in detail the relative positions of the patient and operator and explains meticulously how to use the suggested instruments. The many case-histories show him to have been a most penetrating observer and a very intelligent interpreter of established facts. In prosthetics he describes a post crown, fixed bridge work and removable partial and full dentures. He even advises how to enamel metal artificial teeth to make them look less offensive and more natural.

In short, it was a great and very complete scientific treatise on dentistry and had in its time the success it deserved. Five years after its first publication a German translation (1733) was published in Berlin. The first French edition was soon sold out and a second enlarged and improved edition was published in 1746. In this second edition, comprising 64 chapters and 42 plates, Fauchard discusses, inter alia, the use of his bow drill, the first rotary dental drill in modern times, to treat successfully certain forms of toothache. He also

describes in great detail for the first time what is nowadays called periodontal disease, which with some justification certain francophile authors call Fauchard's disease. A third edition appeared in 1786, 25 years after Fauchard's death in 1761. The book was used as a textbook by students well into the first half of the 19th century. Its popularity encouraged other dental authors to publish their works, Philipp Pfaff's Abhandlung von den Zähnen appearing in 1756 and John Hunter's Natural History of the Human Teeth in 1771.

Today all the original editions of Fauchard's book are of great rarity and not easily available for perusal. Fortunately there appeared in 1946 an English translation of the second edition by Lilian Lindsay and in 1961 Julien Prelat in Paris published a beautiful facsimile of this 1746 edition. These two publications make it easier to study this first great scientific book on dentistry which many more dentists and dental students should read in order to appreciate what we all owe to Fauchard, so rightly called the father of modern dentistry.

The Treatment of Jaw Injuries before and during the 1914-1918 War

J.E. McAuley

Historical Survey

Ever since man started to wage war, the treatment of facial injuries has been a problem. From the days of single combat to the days of the sophistication of the Second World War, the face has always been one of the most vulnerable parts of the body. The first clinical description of a fractured jaw was found in the Edwin Smith Papyrus, written about 1600 B.C. in Egypt, and the Corpus Hippocraticum of the 4th century B.C. mentions bandaging a fractured jaw. In more modern times, Thomas L. Gilmer used steel wire to bring the teeth into occlusion and immobilise the mandible, describing his method first in 1887. Open reductions of mid-line fractures of the mandible were performed and reported in 1846 by Gordon Buck and in 1859 by R.A. Kinloch, while circumferential wiring was first used in 1840 by a French Army surgeon, Jean Baptiste Baudens, his technique being modified by Cesar Alphonse Robert in 1852. Greene Vardiman Black was the first American to use this method, tying the wires over a gutta percha base plate in the mouth. Several types of combined intra-oral and external appliances were devised in the late 18th and early 19th centuries. Many early methods of fixation depended on the additional support of an occipito-frontal bandage, usually the four-tail type. In 1857 T.H. Hamilton, an American, introduced a leather support attached to a headband above the ears. Metal cap splints lined with gutta percha were favoured by Sir John Tomes when there was displacement of fragments. In the 1860s Thomas Brian Gunning designed a vulcanite splint which covered all the teeth and the adjacent supporting tissues in the arch. His account of this was published in 1867, but he had treated himself with it when he fractured his jaw in 1862.

Valadier and Gillies

Many of the methods described were still in vogue at the outbreak of the First World War, jaw injuries being relatively uncommon in those days before the present high incidence of road accidents. Nor was it generally expected that facial injury would be so frequent in occurrence in wartime, but Charles Valadier, who had a fashionable practice in Paris and was an American born of French parents, foreseeing the likelihood of static trench warfare, offered his services to the British Red Cross Society in October 1914 and was the first dental surgeon to provide treatment for British troops in France since the first British contingent of dentists did not arrive until November 1914.

It is said that in October 1914 during the battle of the Aisne Sir Douglas Haig, then in command of the First Army, was stricken with toothache at the height of operations. No dental surgeon being available, a French practitioner had to be summoned from Paris. One wonders whether it might have been Valadier who provided Haig's treatment, but this cannot be determined. As a result the War Office was requested urgently to send dental surgeons to serve in the Army; these were given temporary commissions on the general list and attached to the R.A.M.C.

Valadier early in 1915 was permitted to organise, partly at his own expense and employing his own technicians, a 50-bed unit attached to the 83rd (Dublin) General Hospital at Wimereux near Boulogne for the treatment of facial injuries. The Army decided to send a medical practitioner to work with Valadier in the theatre, appointing Harold Delf Gillies who had also volunteered his services to the British Red Cross Society. Then 32 years of age, he had gained the F.R.C.S. in 1910 and before the war had been assistant to Milsom Rees, consultant ENT surgeon at St. Bartholomew's Hospital. Gillies was introduced to a new type of wound and realising his need to learn about the methods of treatment he obtained permission to spend some months visiting others who were undertaking facial surgery, notably Hippolyte Morestin in Paris. Convinced of the need to provide reconstructive or plastic surgery to the face, Gillies persuaded Sir Anthony Bowlby and Sir George Makins, both consultants in surgery to the Army, to support his approach to the Director-General with a view to making special provision for the treatment of facial injuries. Consequently a new unit of plastic surgery was established at the Cambridge Hospital in Aldershot, receiving patients from France from mid-1916 onwards.

An estate called Frognaal at Sidcup in Kent was purchased by the British Red Cross Society in 1917 and equipped as a hospital for facial and jaw injuries, quickly becoming the training centre for plastic and oral surgeons and known as the Queen's Hospital. In charge of the team of dental surgeons and technicians was William Kelsey Fry who had worked with Gillies at Aldershot from the latter part of 1916, having previously been a medical officer to the 1st Battalion of the Royal Welsh Fusiliers and awarded the Military Cross for gallantry. Thus began the fruitful partnership between dental and plastic surgeon in the treatment of maxillofacial injuries, which produced many articles during and after the war describing the various ways of treating similar conditions.

Publications on maxillofacial surgery

The most comprehensive record of Valadier's work is given in the British Journal of Surgery of July 1917, based on the treatment of over 1000 cases of facial injuries. Valadier's co-author was H. Lawson-Whale, a captain in the R.A.M.C. Whale had been a rhinologist who became an enthusiastic plastic surgeon for the duration of the war. He had translated one of the few reliable books on injuries to the face and jaw written by Martinier and Lemerle, and he took up the treatment of these injuries with keenness.

Valadier appreciated that the suturing of lacerations around the mouth might cause problems in the management of jaw fractures by cicatrisation and trismus. He advocated the retention of as many teeth as possible, even those in the line of fracture, although realising that it was not always practicable to do so. His principles were surgically sound. He advised that the facial wound should be closed as soon as possible because lacerated flaps retract and make later approximation of the soft tissue difficult.

Soon after the publication of Valadier and Whale's paper, an issue of the British Medical Journal was devoted to jaw injuries, including a resume of that paper. There was also an article by J.F. Colyer from the Croydon War Hospital in which he strongly advocated the removal of all teeth in the region of fractures, if necessary with adjacent necrotic bone, as the best way of eliminating sepsis. He considered that the maintenance of the arch and the occlusion of the remaining teeth was of no great importance as these would eventually come into a functional bite. A third article by Varaztad Kazanjian, dental surgeon to the Harvard Medical Unit in France, favoured the early immobilisation of the bony fragments to retain the contour of the arches and keep the teeth in occlusion. He emphasised the danger of secondary haemorrhage, especially from the lingual arteries. These three articles illustrate the divergent views held by oral surgeons at the time. There was some antipathy between the various centres engaged in treating jaw injuries. William Guy who served throughout the war with the No.2 Scottish General Hospital did not support the principle of complete immobilisation for fractured mandibles but considered that the fragments should be coapted (his own word) and retained by open splints or frames. These were cast in silver and could be removed so that the teeth and mouth could be cleansed, and they permitted the normal movements of mastication. Guy claimed that his only failures were fractures behind the third molar and on visiting Colyer's department at Croydon noted 'the gloomy aspect of men with immobilised jaws in contrast with the cheerful smiling faces of my unmuzzled patients'. Occasionally he had to resort to the Hammond splint for bilateral or multiple fractures of the mandible.

Another well-known dental personality of the time was William Warwick James, employed during the latter part of the war as part of a group of general and dental surgeons who treated facial injuries at No.3 General Hospital at Wandsworth. He had offered his services to the Army at the outbreak of war but had been refused; joining the French Red Cross he worked as a general surgeon in Normandy, gradually taking over all facial injuries. His approach to the treatment of jaw injuries was perhaps more rational than others and he tended to favour inter-dental wiring wherever possible. He found that wiring reduced the incidence of secondary haemorrhage and the onset of pneumonia, these being the two major complications of facial wounds at that time. He also used splints but discovered their limitations: impressions could be taken only in composition or plaster, the former seldom accurate, the latter difficult to use in compound and comminuted fractures. Cap splints were invariably made in one piece and the fractured fragments of the mandible had to be fitted into the splint at the time of reduction; sectional splints with locking bars and plates did not come into general use until the Second World War. In cases associated with extensive soft tissue injuries of the face where double cap splints were used, it was considered an advantage to fix such splints in the open-bite position to reduce the duration of post-operative trismus. However, when the fracture was behind the last standing tooth or in the ramus or the neck of the condyle; these splints were not good at controlling the posterior fragment; in such cases it was sometimes possible to control the posterior fragment by fixation of a horizontal fixed flange extending backwards from the lower splint. Today the standard treatment of many such cases would be by means of intra-osseous wires, but in the days before antibiotics surgical wiring was often followed by infection and non-union.

Many of the techniques described are no longer in use but a few have stood the test of time, and Valadier, Gillies, Kelsey Fry and their colleagues contributed much to the present-day treatment.

Based on a contribution to the Proceedings of the Institute of Maxillo-Facial Technology, 1976.

The W.H. Taggart Centenary

On Wednesday, 19th October 1977, one hundred years after Dr. William H. Taggart's graduation, commemorative celebrations were held at his home-town of Freeport, Illinois. After an informal lunch and the placing of a wreath on his grave, a bronze commemorative plaque was dedicated at the First National Bank, the site of the second-floor office where Taggart practised for 16 years until he moved to Chicago¹.

William H. Taggart was born on 23rd March 1855². His parents were of American birth and had moved to Illinois from Pennsylvania and his father was at various times school-teacher, county sheriff, grocer, justice of the peace and railway mail clerk. He had fought and been slightly wounded as Captain of the 93rd Regiment of Illinois in the American Civil War. William Taggart was educated at the grammar and high schools in Freeport and on leaving school in 1872 was apprenticed to a machinist; he had been fascinated since the age of eight by his father's lathe and in his teens had won a prize at the county fair for a complete workable stationary engine which he had made, casting and turning every part himself. For some reason which is unknown he left the machinist after less than a year to go to Chicago where unemployment was such that he had to accept a job as plate polisher in a dental surgery. Three months later he bought instruments and became an itinerant dentist based in Freeport.

When he could afford it, Taggart enrolled at the Philadelphia Dental College, graduating after two years in 1877. He set up a thriving practice in Freeport, becoming the leading dentist in the community. Throughout his life he had a strong urge to improve and perfect; he was expert at making continuous gum dentures, a notoriously difficult technique, and having contributed to the evolution of the electric furnace, he became an excellent porcelain operator; he was also well known for his fine hollow gold inlay restorations, another intricate operation.

In 1892, the year of the World's Columbian Dental Congress in Chicago, Taggart set up practice in that city where he already numbered among his friends G.V. Black, Edmund Noyes and C.N. Johnson. He rapidly acquired a substantial practice among the wealthier families. He was elected first president of the Chicago Dental Society after its merger with the Odontographic Society in 1905, and had also been, in 1892, president of the Illinois State Dental Society.

Taggart dreamt of a filling which could be made easily and quickly by casting and then cemented into the tooth, and his energies were dedicated to producing such an inlay. 15 years of experiment underlay the invention which he presented on 15th January 1907 in Brooklyn at the New York Odontological Society, revolutionising the practice of dentistry. Taggart indicated that he expected no payment from those who used his method; he intended his remuneration to come from the profits on the sale of supplies and in particular from sales of the casting machine for which he was showered with orders. Sadly, mass production of the machine was not wholly successful. Taggart would have been wiser, lacking as he was in business or manufacturing experience, to have allowed a dental equipment company to manufacture and distribute the machine on a royalty basis. As it was, the dental profession, unable to obtain immediate delivery, turned to other similar machines pirating Taggart's invention which were quickly on the market at a cheaper price, and by the time Taggart could fulfil orders his market had vanished.

In an attempt to help him, Dr. J.N. Crouse, President of the United States Dental Protection Association, proposed a licence plan whereby 15 dollars would be paid by members of the Association to Taggart in return for practising his inlay technique. This would bring in new members to the Association and build its reserves and with nearly 50,000 practising dentists at that time would reimburse Taggart with at least half a million dollars. He was prevailed upon to sign this agreement and a circular letter was sent by Crouse to every dentist in the United States, but the project failed because most dentists continued to use the method without payment, knowingly infringing the law. A court case allowed Taggart's claims and established the validity of his patents in the Chicago area. Taggart thereupon sent a letter to the dentists in the area demanding 150 dollars for a licence, rising to 250 dollars if not paid within five days, and threatening litigation for non-compliance. In reply, the recalcitrant dentists formed the Dentists Protective Alliance of over 7000 members with a collective defence fund of more than 100,000 dollars. Taggart's legal advisers decided to change their case from one of priority in the technique to pleading its 'great utility' for the profession, provided by its wide and rapid acceptance. It was, however, said that B.F. Filbrook of Dennison, Iowa, had cast Watts metal and gold inlays as early as 1896 and had read a paper to his local dental society, anticipating Taggart by a decade; his poor reception plus technical problems with the investment caused him to abandon the project. Search of the library of the Iowa State Dental School brought to light the only printed copy ever traced of Filbrook's essay on cast fillings with several short discussions. The existence of priority being proved, the court could not accept the 'great utility' plea and nullified Taggart's claims, leaving the profession free to use his process freely and Taggart with no hope of recompense after 15 years of litigation.

Frustration and disappointment made him embittered. The last 11 years of his life before his death at the age of 78 were increasingly lonely and tortured by the excruciating pain of neuritis in his arm. He died on 17th April 1933 from apoplexy. His obituary notices³ are generally cool in tone with the exception of one by his friend Dr. R. Ottolenghi⁴ which calls him dentistry's greatest benefactor and is an impassioned indictment of the profession's ingratitude to a man who improved their practice, enriched their purses and benefitted their patients. No recognition had been accorded Taggart by medal or other award from his colleagues, he pointed out.

Since then amends have been made, both by the ceremony in Freeport in October 1977 and previously. The centenary of Taggart's birth was commemorated by the American Dental Association⁵ in 1955 by the passing of a resolution from the Kansas State Dental Association 'to memorialise the centennial of the birth of William H. Taggart, who made many contributions to the dental profession through his development of the casting process'. Dr. George M. Hollenback prepared a plaque and a scroll in tribute to him to be presented to all dental schools in the United States, the first going to the School of Dentistry at Temple University, successor to Taggart's old college. The tribute says 'Dr. Taggart loved his profession ... He had a rare combination of skills; he appreciated the value of research; and had an unusual understanding of the scientific approach. His technical ability was of the highest order. He was a patient man, with the willingness to investigate unknown fields. These faculties, combined with imagination and a spirit of adventure, made him one of the great leaders of his time'.

To mark the golden jubilee of Taggart's discovery, an editorial recalls the invention of the cast inlay and the clamour that ensued, paying tribute to Taggart who lifted world dentistry on to a higher plane and improved operative dentistry by his work which he published and also taught in clinics from coast to coast. Indeed, the editorial claims that he finally effected the transformation of dentistry from a craft to a profession. So Taggart's name has been honoured by later generations, if not by his own contemporaries.

E.M.S.

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Two new historical volumes

HALLIDAY, R.W. A history of dentistry in New South Wales 1788 to 1945. Arranged and edited by A.O. Watson. Published by the Australian Dental Association, New South Wales Branch, 1977.

The authors have painstakingly traced the faint clues to dental history in the early days of the pioneer dentists in New South Wales, proceeding through the advent of the modern developments in materials and techniques as far as the end of the Second World War. They describe the evolution of dental education and legislation and the formation of associations of dental practitioners, the foundation of the first dental journal and the history of dentistry in hospitals and in the armed forces. There are appendixes with lists and bibliographies which include a valuable dental bibliography listing pamphlets and articles by authors from New South Wales published between 1830 and 1903. The book is generously illustrated and beautifully produced.

ASBELL, M.B. A century of dentistry. A history of the University of Pennsylvania School of Dental Medicine 1878-1978. Published by the University of Pennsylvania, 1977.

The first three sections of this book deal in turn with the days before the founding of the Dental Department of the University of Pennsylvania, the years 1878 to 1917 under deans Essig, Truman and Kirk with a digression into the biography of the colourful Thomas Wiltberger Evans, and the years 1917 to date under deans Turner, Appleton, Burket and Cohen. Part IV has chapters on the Society of Dental Alumni, the departments for auxiliary personnel, the facilities for research and the provision of learning resources. There is a bibliography and lists of graduates and of the administration and faculty. Much biographical information enlivens the pages and great trouble has been taken in the choice of illustrations.

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