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LINDSAY SOCIETY FOR THE HISTORY OF DENTISTRY

OFFICIALS
1997-98

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EDITORIAL

Looking back over the twenty-three year history of what is now *Dental Historian*, we can see how it has metamorphosed with time from a tall, willowy newsletter into the squat, sometimes portly, bright yellow (but never jaundiced, I hope) journal of today. Only a few sheets thick in the first instance, it has recently extended to a good sixty pages and the last issue contained the maximum number possible for the type of binding. Issued annually in the beginning, since 1988 there have been two issues a year. More recently, we have produced the Lilian Lindsay Memorial Lectures separately and begun a series of Occasional Publications. For the last five years, we have used a format which gives twice as much copy on a page and this has allowed us space to publish full-length papers.

The original function of the publication was purely internal: to provide the far-flung members of the Lindsay Society (then Club) with news and details of papers delivered at meetings. Whilst it still has that role (a two-edged one, for there is the danger that members will be content to read the journal rather than come to meetings), it has also taken on others.

Clinical journals show an increasing reluctance to publish papers with historical themes: they find them too long, too full of references, too esoteric, too serious — or maybe just too divergent from the stereotyped folk history of dentistry, peopled by colourful quacks and blacksmiths yanking out teeth at the forge. *Dental Historian* has thus become one of the few journals in Britain where full-length original papers on all aspects of the history of dentistry can find a home. (It is, in fact, the only publication in Europe devoted exclusively to the subject). This role of publisher is an essential one, since there is more original research being undertaken in this field than ever before: nine members or former members of the Society have been awarded higher degrees for their work on the history of dentistry in the last dozen years. Most of the small number of books we have on the history of dentistry in this country were written some time ago, in a different tradition and for a different audience. The contents of these books are sometimes outdated or even inaccurate and their perspectives and methodology not those of modern history writing. This is not at all to dismiss them, but unless we publish in *Dental Historian* secondary literature based on current and more rigorous research, newcomers to the field — be they professional (medical) historians or interested amateurs — will continue to use them as their first port of call, take from them erroneous impressions or swiftly come to the conclusion that 'no work has been done on

the history of dentistry'.

The third vital role of the journal is to disseminate this well-researched work on the history of dentistry to a wider audience than members of the Society alone. *Dental Historian* has long been distributed not only to all dental libraries in the country but also to a number of important libraries concerned with medicine and the history of medicine. In addition, it is subscribed to by dental libraries and individuals in the United States, Germany and France, its contents are displayed on the home page of the British Dental Association and are listed in the *Index to Dental Literature* and in *Current Work in the History of Medicine*. Since we have an ISSN number, our title appears in lists of periodicals. This work of dissemination will be further extended when the index for the first 33 issues is produced.

The journal owes its origins to the initiative of the committee in the 1974-75 session and was initially produced by successive Secretaries — Muriel Spencer (later Cohen) (issues 1-6), Brenda Fox (7-8), Jenny King (9) — each of whom made it her own. To Margaret Clennett (issues 10-19) goes the credit of taking on the challenge of introducing the format which transformed it from a newsletter into a journal. Julia Marsh applied improved technology to her issues (20-23), found a new printer and much enhanced the appearance of the finished result. When Julia moved on, Anne Hargreaves and I produced issue 24 jointly, since when I have edited it alone. In all the issues of *Dental Historian* there have been important and original papers, but as I come to the end of my five year spell as editor, I want to thank especially warmly all the contributors to issues 25-33 for the generosity with which they co-operated in the editing of their papers so that we could create that modern secondary literature which we so much need:

Pierre Baron, John F. Beal, John R. Bradshaw, J.G.L.Burnby, E. Muriel Cohen, R.A.Cohen, S.C.Cowman, David Cubitt (the mainstay of *Notes and Queries)*, Angela Dain, John R. Davey, Xavier Deltombe, Trevor Fawcett, Stanley Gelbier, A.S.Hargreaves, Jean Hugh-Jones, Roger King, Jeffrey Lesser, Curt Gerhard Lorber, Helen Marlborough, D.K.Mason, R.McKendrick, J.E.McAuley, Howard Merrill, J.J.Messing, H.W.Noble, F. Rawlings, Rufus M. Ross, Peter Schröck-Schmidt, W.T.Sholl, Ernest Smith, Alan Stanley, Donald J. Timms.

Christine Hillam
Clinical Dental Sciences
University of Liverpool

OBITUARY

It is with great regret that we announce the death in February 1998 of our Honorary Secretary since 1993, Rodney Hawkins.

At school in Dunfermline, Rodney trained in Edinburgh (along with another of our members, Howard Merrill) where he was Student President of the Dental Students Society, as well as playing hockey and cricket for the Dental School. On qualifying in 1952, he moved south to Hitchin and set up his own single-handed practice in Stevenage.

He was a man with the widest interests — antiques, music, books, ornithology — and a collector. As well as being Secretary of the Lindsay Society, he held the same position in the society for the history of golf, a sport of which he was ardent and expert exponent. Captain of his club, he was author in 1985 of *Golf at Letchworth*.

Rodney's interest in the history of dentistry was of some thirty years standing, although his involvement in the Society was more recent. It was at the 1993 AGM that he found himself (perhaps somewhat to his own surprise) offering to take on the position of Secretary in place of Julia Marsh. He approached the task with vigour and enthusiasm in a style that was all his own, ever supportive of new ventures and ways to publicise the Society. It was during his period as Secretary that the switch was made from London meetings to an autumn conference and that the Lilian Lindsay Memorial Lecture was inaugurated.

Sadly, illness prevented us from enjoying Rodney's company at recent meetings and at the 1997 AGM we learned that he thought it was time for him to resign.

His death has deprived not only individuals but the Society as a whole of a good friend.

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EQUAL IN DEGREE BUT DIFFERENT IN KIND:

the case for and against the establishment of dental degrees in the United Kingdom †

Helen Marlborough *

The nineteenth century campaign for dental reform, which focused to a great extent on the establishment of institutional education and qualification for the dental profession, is well documented. Less well documented is the establishment of educational parity with equivalent medical professions and in particular the transition from qualification by college licence to university degree.

Despite the establishment of dental degrees in the civic universities in the midlands and north of England from 1900, the Bachelor in Dental Surgery (BDS) did not become the standard qualification for those entering the dental profession until the period following the Dentists Act, 1956. Instead, the dental licence (the LDS awarded by the colleges of surgery), and particularly the LDS RCS Eng, persisted as the standard qualification for the relatively few who sought a dental qualification (Fig.1 below).[1]

Several inter-related factors conspired to suppress demand for university degrees. Chief among these was the lack of demand for dental qualifications owing to the low aspirations of the majority of practitioners, the absence of an effective monopoly for qualified practitioners prior to 1921 and the registration of large numbers of unqualified dentists under the terms of the 1921 Act.

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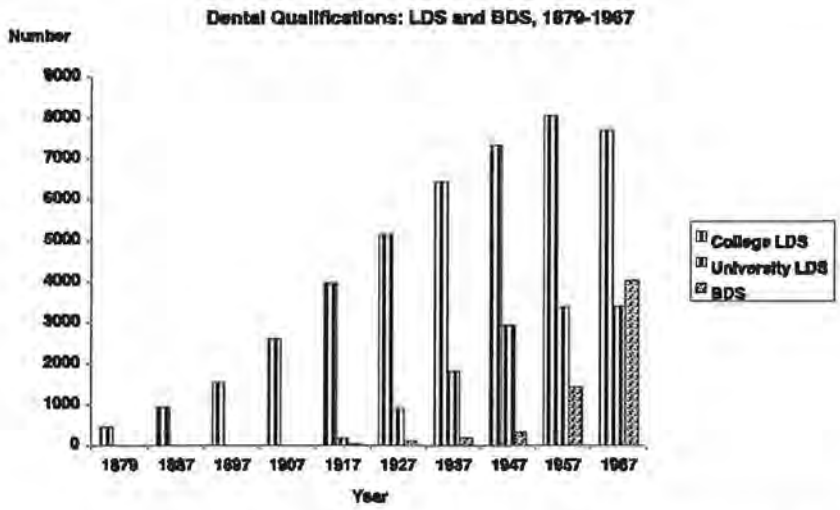
† Based on a paper delivered to the Oxford Conference of the Lindsay Society for the History of Dentistry, September 1997.

* *Helen Marlborough, PhD, Subject Librarian, the Library, University of Glasgow.*

1 Source: *Dentists Register* (1897, 1887, 1897, 1907, 1917, 1927, 1937, 1947, 1957, 1967), 'Table showing the numbers and original qualifications of persons registered in the *Dentists Register* on 1 January'. These figures do not include a university or college LDS or BDS taken as additional qualifications.



Following the Dentists Act, 1921, the majority of registered dentists were those who had received no formal professional education and held no certificate or qualification testifying their professional competence. This may be illustrated by an entry-by-entry analysis of the *Dentists Register* for 1923:

total registered				**12,762**
total unqualified				7,668 (60%) [2]
total qualified				5,094 (40%)
	LDS		4,924 (39%)	
		RCS Eng	2,754 (22%) [3]	
		RCS Edin	690	
		RFPS Glasg	603	
		RCS Irel	470	
		university	407 (3%)	
	BDS		75 (0.58%)	
		1st qual.	64 [4]	
		higher qual.	11	

2 'Dentists, 1878': 947; 'Dentists, 1921': 6,721.

3 55% of total qualified.

4 Manchester, 5; Birmingham, 2; Liverpool, 14; Leeds, 2; Bristol, 1; Dublin, 14; Nat.Univ. Ireland, 26.

The salient points here are that 7,000 unqualified dentists had been registered; that the majority registered were unqualified; that of those qualified 36% held a college LDS and of those more than 50% held the LDSRCS Eng.

In the period following 1921[5]

> [t]he occupation of dentistry changed ... to a scientific branch of medicine, [practised] by qualified, skilled practitioners offering a comprehensive range of treatments [and] this transformation was only achieved ... by the acquisition and application of scientific and medical knowledge to the developing medical specialism.

However, this transformation was only fully realised with the advent of university dental education. Ultimately, the universities extended the scientific foundations of the dental curriculum and advanced the frontiers of dental science to greatly extend the range of conservative and preventive dental services. In a period when 'medical knowledge became more scientific [and] medical education more systematic',[6] science-based university curricula were perceived by many as inappropriate to career prospects and the substantially technical nature of dental practice prior to the establishment of the National Health Service (NHS). Although only forty years elapsed between the establishment of the LDS and the first dental degree, it took longer for university degrees to become established as the standard qualification in dentistry. This paper will focus on the academic case for a dental degree and the inter- and intra-professional conflict, which impeded the establishment of higher standards of dental education.[7]

Although the Royal Colleges established the administrative structure for examining the LDS, 'the foundations for an evolving and progressive profession',[8] the colleges did little to raise standards of education and training for the medical professions. Indeed, 'in a naked struggle for power and status'[9] the colleges sought to block the emergence of new specialisations and new stan-

5 Rufus M. Ross, 'The Development of Dentistry: a Scottish perspective, 1800-1921' (unpublished PhD thesis, University of Glasgow, 1994), p. 363.

6 S.W.F.Holloway, 'Medical Education in England, 1830-1858: a sociological analysis', *History*, 49(1964), 299-324.

7 This kind of conflict has been described by Irvine Loudon as 'an outstanding feature of the period of reform' (I.Loudon, *Medical Care and the General Practitioner 1750-1850* (Oxford: Clarendon Press, 1986), p. 172.

8 Ross, p. 365.

9 Loudon, p. 172.

dards of education and training which might adversely affect the income they derived from issuing licenses and the status of their members' qualifications.

Although some have argued that the main thrust of the dental reform movement was 'control of the market for dental services [and that this] is what professionalism is about',[10] high standards of professional education and qualification were prominent among the objectives of dental reformers from the mid-nineteenth century onwards. From 1857 John Tomes and others emphasised that dental education should be equivalent to but different from that established for other medical professions.[11] Prior to the Dentists Act, 1878, Thomas Fletcher suggested that[12]

> one of the first duties of the Dental Reform Committee is to take effectual steps to make the dental diploma something more than an inferior animal.

The dental profession was

> only a second-rate thing, a kind of rubbish shoot and a home for incapables.

In 1878, an editorial in the *British Journal of Dental Science* (*BJDS*) pointed out that universities elsewhere provided 'the highest Dental education, and their degrees are valued accordingly'.[13] The establishment of university dental degrees in the United States fuelled the debate. Notwithstanding the lack of demand for the LDS, some members of the profession were aware of the need for higher standards.

General Medical Council (GMC) supervision consolidated the scientific

10 Guy Dussault, 'The Professionalisation of Dentistry in Britain: a study of occupational strategies, 1900-1957' (unpublished PhD thesis, Bedford College, University of London, 1981), p. 11.

11 J.Tomes, FRS, FRCS, LDSRCS Eng (1815-1895), one of the leading dentists of his day, was an unstinting campaigner for the reform of the dental profession and for standards of dental education equivalent to medical and surgical practitioners. The establishment of the LDSRCS Eng in 1858 was due largely to his determined efforts. His lectures in dental surgery were published in 1848 and his *System of Dental Surgery*, first published in 1859, became a standard dental text which ran into several editions. The Sir John Tomes prize awarded by the Royal College of Surgeons of England was established in his honour in 1894 (*J.Brit.dent.Assoc.*, 16(1895), 462-92, Obituary, and 'Sir John Tomes, F.R.S.', *J.Brit.dent. Assoc.*, 7(1896), 323-26).

12 Thomas Fletcher, 'The Dental "Profession"', *Brit.J.dent.Sci.*, 20(1877), 134-36, Miscellanea.

13 *Brit.J.dent.Sc.*, 21(1878), 552-53, Editorial.

and medical curriculum and ensured that the dental curriculum did not focus on technique at the expense of science and medicine. The scientific foundations of the dental curriculum, which underpinned diagnostic, therapeutic and preventive dentistry, would be a significant factor in the transition from diploma to degree. Under the college system 'there was no organic connection between the teaching and the examination' which, it was argued, fostered cramming rather than developing critical and inquiring minds.[14] In 1878 Alfred Barry, Principal of King's College London, stressed that, 'Examining is an inherent part of teaching and the two should not be divorced'.[15] Universities integrated the functions of teaching and examination.

At the Annual General Meeting of the British Dental Association (BDA) in 1890, amidst discussion of such important issues as the need for dental services for the armed forces and for schoolchildren, and the need to educate the public in the importance of dental care, George G. Campion presented a paper[16] described later as 'the first articulate utterance in the matter of dental degrees'.[17] Two years later, echoing the objectives of John Tomes and the dental reform movement, Campion concluded that[18]

> our education should equal a medical education in degree, though differing from it in kind. That is the object towards which we must strive ... which will only, if ever, be achieved when our degrees in dentistry — Bachelor and Master of Dental Surgery — range at the universities side by side, and on a par with degrees in medicine and surgery.

The need for higher dental qualifications was not generally accepted.

14 *The Cambridge Social History of Britain 1750-1950*, ed. by F.M.L.Thompson (Cambridge: Cambridge University Press, 1990), p. 127.

15 Alfred Barry, 'The Good and Evil of Examination', *Nineteenth Century*, 3(1878), 647-66.

16 G.G.Campion, 'The Need of a Higher Qualification in Dental Surgery', *J.Brit.dent.Assoc.*, 11(1890), 565-75. George Campion (1862-1946), LDSRCS Eng, was Honorary and consulting dental surgeon to the Manchester Dental Hospital, President of the Odontological Section of the Royal Society of Medicine in 1918, President of the British Society for the Study of Orthodontics (BSSO) and of the BDA in 1923. On his retirement he was awarded an honorary MSc from Manchester University (*The Advance of the Dental Profession: a centenary history, 1880-1980*, [ed. by R.A.Cohen], (London: British Dental Association, 1979), p. 250).

17 'The BDS of the University of London', *Brit.dent.J.*, 43(1922), 161-64, Editorial.

18 G.G.Campion, 'The Higher Dental Qualification Question', *J.Brit.dent.Assoc.*, 13 (1892), 52-57, Correspondence.

Whereas in medicine 'higher qualifications serve their true purpose in encouraging enterprise, research and learning',[19] higher qualifications were not deemed appropriate 'in a branch of science so limited and circumscribed as Dental Surgery'. Others regarded the prospect of higher standards as a threat to the status of the LDS. An editorial in the *BJDS* in 1890 suggested that degrees, which would create an elite, split the profession into a higher and lower grade of practitioner and thus devalue the LDS, would not be in the best interests of the majority.[20]

Following the University of London Act, 1898 the University of London awarded qualifications for the medical profession and university education gradually replaced pupillage, college examination and licence.[21] Thereafter the increasing importance of university degrees in medicine and surgery meant that the LDS could not be regarded as the ultimate achievement.

In 1899 the Deans of the London dental schools (Sidney Spokes and Morton Smale) petitioned[22] the University of London Commissioners to establish a Bachelor of Surgery (BS) in dental surgery on the grounds that

> an equal privilege should be granted to Dental Students of obtaining a University Degree in the special subject of their profession ... by provisions equivalent to those required of the Medical and Surgical Professions.

Recognising the need to accommodate their objectives to the vested interests of the medical establishment, the petitioners proposed that the degree would be registrable only on the *Dentists Register* and would not entitle holders to register on the *Medical Register* or use the title 'doctor'. Yet even these limited

19 J.C.Oliver, 'The L.D.S. Diploma', *J.Brit.dent.Assoc.*, 11(1890), 638-39, Correspondence.

20 *Brit.J.dent.Sc.*, 33(1890), 947-49, Editorial.

21 *Early Victorian England, 1830-1865*, ed. by G.M.Young (Oxford: Oxford University Press, 1934), p. 465. Licensing had been a lucrative source of income for the Royal Colleges whose members resisted the loss of status for their college qualifications (Interview, May 1990, with Professor A.D. Hitchin, CBE, LDS, BDS, MDS, DDSc University of Durham, FDSRCS Edin, FFDRCS Irel, FDSRCPS Glasg, D.Odont, Lund, Hon. FDSRCPS Glasg, Professor of Dental Surgery in the University of St Andrews and Dean of the University of Dundee Dental School).

22 A copy of this petition forms part of C. Bowdler Henry's mss notes for Chapter XXI of his unfinished history of the London Hospital Medical College, held in the museum of the British Dental Association, London. The petitioners proposed the establishment of either a Faculty of Dental Surgery, a Dental department within the Medical Faculty, or recognition of the dental schools as colleges of the University. It was decided in 1899 that the University of London would have a Board of Dental Studies.

proposals were rejected. In the United States the early establishment of dental degrees entitling holders to use the prestigious title 'doctor' was accompanied by high status for the dental profession. In the United Kingdom deference to the medical establishment and the low aspirations of the majority of dental practitioners impeded the establishment of equivalent qualifications. As in 1858 and 1878, those advocating higher standards were a minority. The majority had vested interests in maintaining the *status quo*.

In the Midlands and north of England the need and the potential demand for university dental education was indeed recognised.[23] However, the LDS awarded by the prestigious colleges of surgeons was the established registrable qualification and, as the demise of the College of Dentists in the mid-nineteenth century had shown, new initiatives were at a considerable disadvantage without the firm endorsement of the London-based medical establishment. An editorial in the *BJDS* observed that[24]

> whether the new degree will attract many candidates for higher degrees than the L.D.S. — which will still of course constitute the qualifying and registrable diploma — remains to be seen.

In 1902 the *Journal of the British Dental Association* published a lengthy correspondence on dental education from Norman G. Bennett,[25] 'one of the most intellectually distinguished alumni of the London School of Dental Surge-

23 BDS degrees were instituted at the following universities: Birmingham, 1900; Manchester, 1904; Liverpool, 1905; Leeds, 1906; Bristol, 1909; Dublin (BDSc), 1911; National University in Ireland, 1915; London, 1921; Queen's University Belfast, 1922; Sheffield, 1922; Durham, 1925; St Andrews, 1937; Glasgow, 1948; Edinburgh, 1949; Newcastle, 1964 (for earlier dates see Durham); Dundee, 1967 (for earlier dates see St Andrews); Wales, 1968.

24 'Degrees in Dentistry', *Brit.J.dent.Sc.*, 43(1900), 592, Editorial.

25 C.Bowdler Henry mss and Norman G. Bennett, 'Dental Education', *J.Brit.dent.Assoc.*, 23 (1902), 162-68; 'Problems in Dental Education II: an Imperial degree in dentistry', *Brit.dent.J.*, 24(1903), 737-41; 'The University of London and Dental Education', *ibid.*, 24 (1903), 781-87 and Discussion, 787-96. Bennett (1870-1947), LDS, MRCS Eng, LRCP, MB BS Cantab, BSurg, MD Cantab, held the highest medical and dental qualifications. He was lecturer on orthodontics at the Royal Dental Hospital, was on the examining boards of the Royal College of Surgeons of England and the Universities of Birmingham and Liverpool and chairman of the Medical Research Council's Dental Committee. Described in his obituary as 'a wise counsellor, scientist, teacher and statesman', he was nominated by the Privy Council to succeed Sir Charles Tomes on the GMC. He was knighted in 1930 and became President of the BDA in the same year (*Brit.dent.J.*, 83(1947), 156-58, Obituary; *The Advance of the dental profession*, p. 242).

ry',[26] who carried the torch lit by John Tomes sixty years earlier. The ensuing debate drew contributions from a wide range of members of the BDA.

Bennett emphasised the deficiencies of the LDS, the inevitability of degrees and the unsuitability of medical or surgical qualifications. Examination currently fell short of a minimum standard, students' knowledge of 'the fundamental subject of inflammation' was often 'very rudimentary' and their knowledge of pathology was 'hopelessly inadequate and miserable in the extreme'.[27] Bennett warned of[28]

> the impossibility of gaining a reasonable knowledge of specialised structures and their functions founded upon an inadequate knowledge of the organisms of which they are an important part.

General medical qualifications were not an appropriate alternative:[29]

> The study of the mechanism of labour ... is extremely remote from the destination of the dental student [whereas] the subject of pathology in its widest sense, and in all its details, cannot be too thoroughly mastered.

However, a longer course of full-time study would make the course more expensive, deter candidiates and 'add to the rapidly increasing army of quacks'.[30] The degree was therefore regarded initially as a higher qualification for exceptional students. The diploma was regarded as 'sufficient to enable a man to earn his own bread and butter and to help the public in eating theirs'.[31] Some eminent dentists, such as Dr John Smith of Edinburgh (FRCS Edin, MD Edin) an examiner for the Royal College of Surgeons of England, questioned whether dentistry was 'big enough for a degree'.[32] The University of London

26 *Brit.dent.J.*, 83(1947), 156-58, Obituary.

27 Bennett, 1902 and 1903, 781-87 and 786-96, Discussion.

28 Bennett, 1903, 785.

29 Bennett, 1903. Bennett also criticised the 'fundamentally erroneous view' that a professional training should 'thoroughly equip a man for the practice of his profession from the time he obtains his diploma' (*ibid.*). Throughout this correspondence Bennett emphasised that professional education was a continuing process (*ibid.*, 783 and Bennett, 1902, 164).

30 W.J.Law, 'A Scheme of Dental Education', *Brit.dent.J.*, 24(1903), 741-42.

31 G.G.Campion, 'University degrees in dental surgery: the question of a University Degree in Dental Surgery', *Brit.dent.J.*, 23(1902), 289-301, on p. 295.

32 John Smith, 'The Special General Meeting', *Brit.dent.J.*, 25(1904), 25-35, Correspondence.

remained resolutely opposed to degrees in London.

In 1904, the BDA held an Extraordinary General Meeting, endorsed by the necessary 250 signatures, to consider 'the expediency of a degree in dentistry'.[33] J.H.Badcock (LDSRCS Eng, MRCS Eng, LRCP Lond), a Harley Street dentist and lecturer at Guy's Dental Hospital, proposed the motion recommending the establishment of a University of London dental degree for candidates who did not hold a degree in medicine or surgery.[34] However, the majority of the members of the Association regarded the proposed degree as 'an insult to their excellent diploma, and an uncalled for injury to themselves'.[35] It was felt that the LDS, the 'little dental surgeon', would be adversely affected by the BDS, or 'big dental surgeon'.[36] Despite Campion's counter-argument

John Smith (1825-1910), FRCS Edin, MD Edin, was Surgeon-Dentist to Queen Victoria in Scotland, president of the Odonto-Chirurgical Society of Scotland and a Fellow of the Royal Society of Edinburgh. He recommended separating mechanical from surgical dentistry and emphasised the need to separate the trade from the profession. He proposed two grades, the dentist whose training emphasised the mechanical and the surgeon-dentist or dental surgeon whose training was wider (*The Advance of the Dental Profession*, p. 243; Personal communication, J.A. Donaldson, 1989; J.M.Campbell, 'John Smith, MD, FRCS, FRSE, LlD, 1825-1910', *Brit.dent.J.*, 101(1956), 33-40; J.A.Donaldson, 'Early Years of Dental Education in Edinburgh', *Brit.dent.J.*, 146(1979), 357-61).

33 George Cunningham recommended that 'it is of the highest importance that a definite decision should be arrived at by so responsible a body as the British Dental Association' (George Cunningham, 'A Retrospect', *Brit.dent.J.*, 25(1904), 67). J.A. Donaldson stressed the significance of the endorsement of the Extraordinary General Meeting by a significant number of BDA members (personal communication, May 1989). J.A.Donaldson (1914-1993), OBE, BA, FDS, LDSRCS Eng, was editor of the *British Dental Journal*, honorary curator of the BDA Museum, joint founder of the Lindsay Club (now Society for the History of Dentistry), author of a chapter on the history of the profession in *The Advance of the Dental Profession*, lecturer on dental history in the University of Edinburgh (1970-84), Menzies Campbell lecturer at the Royal College of Surgeons of England, guest lecturer to the University of Glasgow, the Royal Society of Medicine, and the Royal Institution, secretary of the FDI, chairman of its sub-committee on dental history and of the editorial committee of the *Revue d'Histoire de l'Art Dentaire* (*Brit.dent.J.*, 174(1993), 303-04, Obituary).

34 'Extraordinary General Meeting of Members', *Brit.dent.J.*, 25(1904), 94-131 and 'The Special General Meeting', *ibid.*, 25-35, Correspondence. Badcock founded the BSSO and was a President of the Odontological Section of the Royal Society of Medicine (*The Advance of the Dental Profession*), p. 250.

35 *Brit.dent.J.*, 25(1904), 110. 87 voted for, 175 against the degree (*ibid.*, 130).

36 M.Hopson, *Brit.dent.J.*, 25(1904), 111. Hopson (1869-1943), LDSRCS Eng, was the first dental student, house surgeon, lecturer and governor at Guy's Dental School, London. He was examiner for the universities of London, Birmingham and Sheffield and President of

that a BDS would make the aspiring dentist a 'Better Dentist Still', the majority were more concerned to protect the status of the LDS. Thanks largely to the vocal London lobby, the Association voted against the establishment of dental degrees in London.

Despite the BDA vote the matter was not closed. In 1905 George Campion reminded the profession of the 'increasing prominence of science' within universities which were 'taking up and expanding the work which in the last century was performed by the different chartered Royal Colleges'.[37] Campion compared the BDA to 'Mrs Partington who, at the height of a great gale, tried with her mop to sweep back the rising Atlantic Ocean'.[38]

Following the establishment of dental degrees elsewhere in the United Kingdom, the University of London adopted a policy of compromise, instituting the Master of Surgery (MS) in Dental Surgery in 1910. There was no London equivalent to the BDS until 1921.[39]

Evidence submitted to The Royal Commission on University Education in London in 1912 emphasised the opposition to the institution of university degrees in dentistry in London not only from the Royal College of Surgeons of England but also from influential members of the University of London, many of whom held qualifications from the College and were examiners there.[40] The College dismissed dentistry as 'not a subject of such depth of scope as to justify the award of a university degree'[41] and anticipated little demand for a degree which would leave the dentist 'only a dentist instead of a doctor, with a less good social position'. Yet it endorsed the University of London MS in dental surgery.[42] The College's endorsement of a post-graduate degree in dental surgery, for a subject which was regarded as of such little depth that it did not merit a university degree appears somewhat inconsistent.

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the British Society for the Study of Orthodontics (*The Advance ofthe Dental Profession*, p. 249).

37 G.G.Campion, 'University Teaching and Degrees', *Brit.dent.J.*, 26(1905), 103-04.

38 *Ibid.*

39 The MS in Dental Surgery was withdrawn in 1948, a few months after the first and last candidate (W.G. Cross, BDS, MB BS, MS Lond) graduated (C. Bowdler Henry mss).

40 Royal Commission on University Education in London. Final Report of the Commissioners (London: HMSO, 1913), Cd. 6717 and Appendix to the Final Report of the Commissioners. Minutes of Evidence. February-December 1912 (London: HMSO, 1913), Cd. 6718.

41 *Ibid.*, p.15.

42 *Ibid.*

As an examining rather than a teaching institution, the Royal College was out of step with advances in higher education. Whereas the College claimed that there was no distinction between the examination for the degree and the LDSRCS Eng and that 'teaching in London will probably always be better than teaching in the provinces', the London dental schools held that the BDS was of a higher standard and would 'advance the science and practice of the profession'.[43]

Because of the inadequate protection for the qualified which meant that there was 'no inducement at the present time for young men to take a dental qualification of any kind', the Commission concluded 'reluctantly' that[44]

> it is probably impossible to require a higher standard of qualification than at present, so long as the law remains unchanged [and] for the great majority of dental students, dental education cannot be raised to a real university standard and therefore ought not to be marked by a university degree.

In the final analysis, the influence of the Royal College of Surgeons of England on university policy in London may be detected in the Commission's recommendation that it was not[45]

> desirable that in London the University should compete with the diploma of the Royal College of Surgeons.

The Commission referred to the University of London's MS in Dental Surgery as 'an illusory concession to the demand for a degree in Dentistry', whereas the degrees offered by the Universities of Manchester, Liverpool, Leeds, Birmingham and Bristol, would create 'as large a class as possible of scientifically trained dentists'.[46]

Delay in establishing a University of London equivalent adversely affected demand for the degrees established elsewhere. Many in London hoped that, lacking the status attached to the Royal College of Surgeons and the

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43 *Ibid.*, pp. 19, 21 and 22. Evidence from the London Hospital Medical College and the London Hospital Dental School.

44 *Ibid.*, p. 32; see also Sidney Spokes, 'Evidence to the Royal Commission on University Education in London', *Brit.dent.J.*, 58(1915), 244-46 and The Royal Commission ... Final Report, pp. 141 and 143.

45 Royal Commission ... Final Report, p. 145.

46 *Ibid.*, pp. 143-44.

University of London, the new degrees would fail.[47]

The universities in Glasgow and Edinburgh followed London's lead. In London (until 1921) and in Edinburgh and Glasgow (until 1948) the Colleges maintained their local monopoly over dental qualifications.[48] Thus, for many years, the Royal College of Surgeons of England effectively blocked the establishment of dentistry as a profession equal in status to medicine and surgery by denying it the status and recognition of university qualifications.

In 1933 the GMC criticised the college licensing system: 'The Royal College of Surgeons of England seems to lack the measure of control over the education of the candidates'.[49] In such criticism lay the beginning of the end of the previously unassailable supremacy of the College LDS. Following the formation of the Education Consultative Committee of the Dental Schools of Great Britain in 1931 (the Dental Education Advisory Council of Great Britain and Ireland from 1937), university teaching staff played a greater role in determining and co-ordinating standards in dental curricula and examinations.[50] Their beliefs found broader implementation in the radically altered conditions of the period following the Second World War.

On the eve of the establishment of the NHS, of those qualified, only 20% held university qualifications, and only 2% had taken the degree as their first qualification.[51] In the long term, better career opportunities consequent on the establishment of the NHS, the incorporation of dental schools into government-funded universities and grants for university students provided the vital stimulus and resources necessary to extend access to and demand for university dental education. Ultimately, the massive injection of government funding for both the universities and the NHS enabled the universities to extend the higher standards of training, which they had pioneered, to all dental practitioners.

47 Interview, May 1990, with Professor A.D. Hitchin.

48 In 1921 the University of London conceded that the MS in Dental Surgery was 'not adapted to the requirements of students' and established a BDS for which the degree in medicine and surgery was not required ('The B.D.S. of the University of London', *Brit.dent.J.*, 43(1922), 161-64, Editorial. 'New Dental Degree of B.D.S. at the University of London', *Brit.dent.J.*, 42(1921), 474-475, General News).

49 Farquhar McRae, General Report on Dental Examinations (General subjects), GMC Minutes, 1933, pp. 14-16.

50 B.C.Leighton, 'The Dental Education Advisory Council: 50 Years', *Brit.dent.J.*, 149(1980), 267-68.

51 Figures derived from an entry-by-entry analysis of the *Dentists Register* for 1947.

THE ROYAL DENTAL HOSPITAL OF LONDON: THE FIRST FIFTY YEARS †

Ernest Smith *

The history of the Royal Dental Hospital of London and its School of Dental Surgery is an important component of the history of the development of dentistry and the dental profession in this country. It was the creation of the Dental Hospital by the Odontological Society of London which made possible the establishment of the first effective dental school, and it was the members of the Society who brought about the inauguration of the Licentiate in Dental Surgery, the foundation of the profession as it stands today.

The institution was born out of controversy between the two groups who have become known as the Memorialists and the Independents, factions in the movement for the reform of dentistry which emerged during the first half of the nineteenth century. It was not only dentists who were moved to make themselves into a profession, of course. The professionalisation of occupations, from accountants to sanitary engineers, and the formation of organisations responsible for regulating the qualification and practice of their members was an important element in the development of nineteenth-century British society. Perkin points out that the objective of professionalisation is to transform a service into an income-yielding property by professional control of the market:[1]

> when a professional occupation has, by active persuasion of the public and the state, acquired sufficient control of the market in a particular service it creates an artificial scarcity in the supply of the service, so that the reward for the service is correspondingly enhanced.

† Based on a paper delivered to the Oxford Conference of the Lindsay Society for the History of Dentistry, September 1997.

* *Ernest Smith, Martinwood, The Street, Womenswold, Canterbury, CT4 6HE, joint author with Beryl Cottell of* A history of the Royal Dental Hospital of London and School of Dental Surgery, 1858-1985 (London: Athlone Press, 1997), *on which this paper is based.*

1 Harold Perkin, *The Rise of Professional Society* (London & New York: Routledge, 1989, repr. 1996), p. 7.

This analysis of the motives of 'reformers' is seen in operation in the controversy between the Memorialists and the Independents, which was ostensibly about the domination of dentistry by the medical profession.

The movement for the reform of dentistry can be said to start in 1841 with George Waite's much quoted *Appeal to Parliament, the Medical Profession and the Public on the Present State of Dental Surgery*, that of the Royal from the Memorial which a group of eminent dental practitioners who were members of the Royal College of Surgeons submitted in 1843 to their College. The College had recently gained the power to confer fellowships upon members considered meritorious and the writers of the Memorial asked that members who were dentists be considered for that distinction. The response they received suggested to the Memorialists that it was considered somewhat *infra dignitatem* for a Member of the College to earn his living solely from the practice of dentistry.

Hillam has described recently the way in which the movement for the reform of dentistry split into two camps, that led by the Memorialists, who saw involvement with the Royal College of Surgeons as the means of upgrading and regulating the profession of dentistry and that of the Independents, who wanted to set up a College of Dentists and make dentistry a separate profession.[2] Briefly, the first group established the Odontological Society of London and succeeded in lobbying for the inclusion in the Medical Act of 1858 of the Dental Qualification Clause, which empowered the Royal College of Surgeons 'to institute and hold examination for the purpose of testing the fitness of persons to practise as dentists, who may be desirous of being so examined, and to grant certificates of such fitness'. Thus, on 2 August 1858, the LDS RCS was conceived — its birth had to await the formal acquisition by the College of the power authorised by the Act.

The Odontologists, however, had not waited for this event. They had decided in June 1858 to proceed with plans for a dental school, regardless of the outcome of their efforts to engage the Royal College, with a curriculum which would satisfy the requirements of a formal qualification if one were to be introduced. Realising that clinical experience was an essential component of dental training, they proposed to establish a dental hospital for the purpose and set up a Dental Hospital Organisation Committee, which on 6 October 1858 was able to report to a meeting of the Society that the Dental Hospital was up and running. A Committee of Management, Trustees, Honorary Officers and a medical staff had already been appointed and regulations governing the administration of the charity had been drawn up. The house in which the

2 Christine Hillam, *James Robinson (1813-1862), professional irritant and Britain's first anaesthetist*, 2nd Lilian Lindsay Memorial Lecture (Lindsay Society, 1996).

Society met, 32 Soho Square, had been leased at a rent of £170 p.a., the sum of £192 5s 8d had been raised towards the cost of conversion, and a further £63 promised. The School opened a year later.

The Dental Hospital, as has been said, was a charity and the Organisation Committee had issued a Prospectus inviting subscriptions from the public. This stated that the charity had been founded to provide for the poor generally

> the means of obtaining gratuitous relief and advice in such cases as are included in the special practice of Dental Surgery and also for affording an opportunity of instruction to those who enter the Dental profession.

Donors of ten guineas in one payment became Life Governors entitled to recommend an unlimited number of patients requiring ordinary relief and three patients each year for special operations; they were also entitled to attend the Annual General Meeting and elect the members of the Management Committee. Subscribers of one guinea enjoyed the same privileges for one year. The Prospectus emphasised the value of these entitlements 'to those who employ large numbers of workpeople and artisans'. (In fact, the Laws of the Charity provided that 'every poor applicant suffering pain shall have gratuitous advice and any operative assistance that may be immediately necessary without a letter of introduction, but that persons requiring special operations shall be admitted only by the recommendation of a Governor'). Stern warnings appeared in the dental press from time to time urging the Hospital authorities to be stringent in restricting their services to the truly needy[3] — one has the impression that outside practitioners were watchful to ensure that people did not get for nothing a service upon which their livelihoods depended.

A contemporary description of the Hospital at 32 Soho Square illustrates the small scale of the initial operation:[4]

> An entrance hall of considerable dimensions served as a waiting room for patients. Off this the operating rooms opened, that reserved for conservative operations and consultations being the principal dining room of the house. It contained three or four operating chairs, bookcases, writing table and other necessary furniture; other rooms accommodated a further seven operating chairs. A large room upstairs served as a meeting room for the Odontological Society and several other rooms were let as offices to the Council of Medical Education. Two rooms in the second storey were joined together to make a lecture room, part of which was benched and fitted for teaching dental mechanics.

3 *Brit.J.dent.Sci.*, 2(1858), 319.

4 D.Hepburn, Address to Royal Dental Hospital Students' Society, 1905.

The Dental Hospital and School inaugurated by the Odontological Society of London claimed to be the first such institution in Great Britain and to be preceded in the English-speaking world only by that in Baltimore, USA, which was founded in 1839. But it was not quite the first in the field in this country. In 1839 W.A.Harrison and E.Saunders (both prominent later in the development of the Dental Hospital) opened The London Institution for Diseases of the Teeth, off Tottenham Court Road. Nearly 6,000 patients attended there during the first four years of its existence and 'pupils were received where they were able to see treatment and operations carried out and carry them out themselves under supervision'.[5] The oldest surviving dental hospital in the British Isles is that at Birmingham, founded in January 1858 as the Birmingham and Midland Counties Dental Dispensary.[6]

The institution occupied the premises at 32 Soho Square from its birth in 1858 until 1874, during which period the workload increased rapidly. Over 2,000 patients attended in 1859, the first full year of operation.[7] At first the work was carried out by the six Honorary Dental Surgeons (one of whom attended each morning except Sunday from 8.30 to 9.30 am), but operations were averaging 35 per day. In 1863 six Assistant Dental Surgeons were appointed, one of whom was in attendance each day from 9 am to noon. In 1869 the staff was augmented by a full-time House Surgeon, after a complaint in the *British Journal of Dental Science* that poor people in pain after noon had to grin and bear it until the following morning.[8]

By 1869 the numbers of patient attendances had increased eightfold at an average cost in that year of £0.033 per attendance. The money was provided by a surprisingly small number of people — the Hospital's Annual Report for 1869 lists 143 Life Governors and 205 annual subscribers. Most were dental practitioners and their families, friends and patients. The contributions would, of course, have been quite inadequate had payment been made for the services of Dental Surgeons, Assistant Dental Surgeons and students.

The method of working, as described in September 1868 in the *British*

5 *Forceps*, 1(1844), 149.

6 Alfred Hill, *The history of the Reform Movement in the Dental Profession in Great Britain during the last twenty years* (London: Trübner, 1877), p. 257.

7 The numbers of operations carried out reached a peak of 22,627 in 1872, falling slightly the following year to 21,904; this reflected not a lack of demand but that resources were strained to the limit. This was to provide justification for the move to larger premises in 1874.

8 *Brit.J.dent.Sci.*, 11(1868), 412.

Journal of Dental Science was much as it was in the modern hospital:

> the nine or ten chairs, attended by careful, earnest students, working to the benefit of the poor patients with as much zeal and care as if they were to receive a five guinea fee for each stopping, never attempting more than they feel themselves competent to accomplish, and at any moment of doubt honestly referring to the Dental Officer of the day, so that at no time is the poor patient the victim of inexperience or experiment.

In the mythology of the Royal it was held that the institution was foremost in the development of dental anaesthesia, but this does not seem to be borne out by the facts. The use of nitrous oxide in dental extraction was demonstrated in America in 1844 and John Snow was using ether and chloroform in the Out-patients Department of St George's Hospital in the 1850s. But it is not until 1865 that mention is recorded in the Annual Report of anaesthesia at the Dental Hospital when through 'the kind and liberal assistance of a Lady Governor' a Chloroform Fund was set up and the anaesthetic 'was regularly administered whenever required'. Nitrous oxide came to the Dental Hospital in 1868, when Thomas Wiltberger Evans, an American dentist practising in Paris, gave demonstrations of its use on patients, and gave the Hospital £100 to buy apparatus for the manufacture of the gas.[9] In the same year a committee of the Odontological Society reported favourably upon the use of nitrous oxide as an anaesthetic in dentistry and its use in this country for that purpose was established.[10] It is the association with Evans and the investigating Committee upon which the Dental Hospital's claim is based. (Nitrous oxide was far from perfect for this purpose, opinions differing as to whether it produced anaesthesia or asphyxia. It was not until the 1890s that Frederick Hewitt, whose work was also carried out at the Dental Hospital, perfected his method of delivering oxygen and nitrous oxide simultaneously).

By 1869 it became clear that the limit to what the institution could achieve had been reached; the throughput of 17,926 patients in that year was the maximum possible in the accommodation available. It was time, the Annual Report stated, 'for a major step involving a permanent increase in the scale of the enterprise and its cost'.

The prime mover in the events which followed was Edwin Saunders. In a letter published in the *British Journal of Dental Science* in March 1872 he appealed to members of the dental profession for money to provide a Building Fund. In it he described the existing premises as 'in an obscure corner, known

9 Recorded in Minutes of the Medical Committee of the Royal Dental Hospital.

10 Hill, pp. 217-25.

scarcely at all to its patrons, with imperfect light and scant room for the good work it undertakes'. 'Can we rest satisfied,' he asked, 'to introduce foreign visitors or our transatlantic friends to an institution so inadequate in scale; and can we hope to raise our profession in social estimation while such a state of things continues to exist?' He asked for subscriptions so that the Hospital could be rebuilt 'to duly reflect honour and credit upon the great body of Dental Surgeons' — supporting Perkin's views on the motives behind the drive for professionalisation.

This approach was justified by the results; by the end of 1873 the Building Fund amounted to £3,622 (about £96,000 at current values). Saunders had by then found what he considered to be suitable new premises at 40 and 41 Leicester Square. Not everyone at the Hospital agreed, but Saunders seems to have railroaded them by what Alfred Hill calls 'restrictive and quietly coercive ideas'.[11] There was, says Hill, an alternative proposal for purpose-built premises rather than 'old ones converted to the nearest approach to convenience they would allow', but the official records make no mention of this. Saunders had his way and the Hospital opened in the new premises on his birthday, 12 March 1874.

The Hospital went from strength to strength in its new home. Patient attendance fell slightly in the first year (to 19,261) but reached 29,242 in 1879 and 35,893 in 1882, by which time there were again complaints of overcrowding. Whereupon Saunders (from July 1883 'Sir Edwin' — 'for many years Dentist to the Royal Family and a liberal benefactor of the public institutions connected with his profession')[12] made over to the Hospital free of charge the 92½ year lease he held on the adjoining building — the Tower House. The acquisition of these additional premises made space for 22 more operating chairs. Simultaneously an opportunity arose to acquire the freehold of both premises, which was done with a mortgage loan of £5,000.

The Hospital and School were now in a rising spiral in which their efforts to increase resources to meet increased demands resulted in increasing the demand even further — more subscribers meant more people able to sponsor patients, so that more people arrived for treatment. In 1886 patient attendance had risen to 43,475 and a further extension of premises was mooted. Thus No. 42 Leicester Square was acquired, providing more clinical room, a lecture theatre and a patients' waiting room.

No one is recorded as saying anything but good about the result of these acquisitions at the time, but twenty years later, Morton Smale, Dean of the

11 Hill, p. 327.

12 *Brit.dent.J.*, 4(1883), 313.

School, said of them, 'we were not only cribbed, cabined and confined, but it was unclean; uncleanly and uncleanable, insanitary, unsavoury, undesirable and unfitted for its purpose'.[13]

Leicester Square itself was not a very salubrious place at this period; an historical account of the Square published in the year in which the Hospital moved there said that its condition had long been a disgrace to the metropolis,[14]

> overgrown with rank and fetid vegetation, it was a public nuisance and an unwholesome fever-bed in a sanitary point of view; covered with the debris of tin pots, cast-off shoes, old clothes and dead cats and dogs.

Edwin Saunders was a wealthy man. He and his wife contributed £600 to the Building Fund. His home, Fairlawns, in Wimbledon, was a showplace with a garden large enough for him to give parties for international medical and dental meetings. He had been interested in dental education from the beginning of the reform movement (as is witnessed by his work with the London Institute for Diseases of the Teeth in 1839), was one of the Memorialists and had been associated with the Dental Hospital and the Odontological Society from their beginnings. He was appointed Dental Surgeon to Queen Victoria and Prince Albert in 1847, and when he was knighted in 1883 he was the first member of the profession to be so distinguished. He had a number of eminent patients; a letter has survived from 1847 written by Florence Nightingale asking for an appointment because she had broken one of her teeth, 'probably gnashing them at ministers'.[15]

Saunders was given to writing poetry. The issue of the *British Journal of Dental Science* which carried his Building Fund appeal also contained some verses by him entitled 'On the Illness and recovery of HRH The Prince of Wales', which began as follows:

> There was revelry and mirth
> And cloudless was the sky
> When a shadow crossed the earth
> And a darkness passed by.

13 Chairman's address at the AGM of the Governors of the Royal Dental Hospital, 11 Mar 1909, reproduced as Appendix 3 in Smith and Cottell.

14 Quoted by C.Bowdler Henry in his unpublished ms history of the Royal Dental Hospital deposited in the BDA Library.

15 Held with the Bowdler Henry papers in the BDA Library.

A hundred hands would seize their brands
To shield him from the foe
But oh not one could save the son
Of England now laid low.

In the traditions of the Royal, Saunders is held to be something equivalent to the Founding Father; Bowdler Henry drafted the following for a plaque for a portrait of him:

He was the virtual creator of the Royal Dental Hospital and School and was the leading spirit among those who made dentistry a profession in this country.

Alfred Hill, a contemporary witness, thought differently: 'Whatever influence Mr Saunders had was exerted, if at all, in a quiet manner during several years from the commencement of the new era in 1856'.[16] As to his being the virtual creator of the School, Hill points out that although he accepted office as a Trustee on the foundation of the charity, he did not occupy a position as dental surgeon or teacher at the School. Nor did he take the LDS examination when it was instituted, unlike most of his leading colleagues who did so in order to give authority to the qualification and to encourage others to acquire it. Saunders's reputation is based upon his instigation and completion of the move to 40 and 41 Leicester Square, but this, as has been seen, was a doubtful benefit.

Records of the activity of the Dental School are sparse in the early years. The fact that it was not until 1873 that the Management Committee, on the recommendation of the Medical Committee, appointed a Dean of the School (Thomas Arnold Rogers) shows how informal the organisation of the School was in the early years. The Curriculum is known, but no details of student numbers can be found until 1862, when there were 22. The Hospital, of course, was a charity obliged by law to publish its accounts, but the School, although constitutionally a part of the Hospital, was conducted almost as a private business operated by the Senior Surgeons (in practice, the Medical Committee). Its accounts were kept separate from those of the Hospital proper so that none of the money subscribed for charitable purposes was used by the School. Any financial surplus arising from the School's activities was shared among the supervising consultant staff. This practice survived in the form of an 'honorarium' paid by the School to members of the Hospital's consultant staff until the 1960s, when the Comptroller and Auditor General, pointing out that instruction of students was part of the normal duty of a NHS consultant in a teaching hospital (remuneration for which was included in his NHS salary), put a stop to it.

16 Hill, p. 325.

Not all the early students would have been studying for the new Diploma; many are likely to have been men in practice or training seeking to extend their knowledge and expertise but with no intention of taking an examination. There was obviously concern about this because in 1868 a rule was made that students would be admitted to the School only on the understanding that they intended to obtain the LDS. Conversely, not all candidates for the LDS pursued formal training: a petition to the Royal College of Surgeons in July 1874 for the amendment of the rules under which dentists in practice could qualify for the Diploma stated that between 1863 and 1873 only 69 candidates examined had studied at a recognised dental school.[17] Moreover, the number of dental students gaining the LDS was still very small in relation to the total number of dentists and there was nothing to stop the unqualified man calling himself 'surgeon dentist' or 'dental surgeon'. In 1877 the *Chemists and Druggists Directory* recorded 1,808 dentists in practice, of whom 387 held the LDS. This highlights the fact that events so far constituted only a small step in the direction of regulation of the profession. An advertisement in a Manchester paper in 1875 makes the situation clear: 'A dentist giving up business will sell his instruments, tools, etc; would teach a purchaser; price, incl tuition, £20'.[18]

A significant event in the history of the Hospital and School was the appointment of John Francis Pink as Secretary on 21 March 1881. His predecessor, Captain H.B.Scoones (in post from 1874) was complimented at the Annual General Meeting of the Governors when he resigned in 1881 on the able way he had carried out his duties. After he had gone, however, Mr Pink found a deficiency of £32 in the petty cash account he had inherited (the total bank balance of the Hospital at the time was only £245). Scoones was told that he should consider the testimonial given to him withdrawn and, after being threatened with 'further proceedings', he returned the money.

Pink was a man of a very different stamp. For many years he combined his post at the Hospital with that of Secretary and Librarian at Charing Cross Hospital Medical School and was also Registrar of Births and Deaths for the Parish of St Martins-in-the-Fields. He became (while still retaining his other appointments) the first paid administrative (as opposed to the later Honorary) secretary of the British Dental Association in 1879. The records show him to have been an astute administrator and an assiduous fund raiser. He managed to carry out all his duties to the decided satisfaction of his several employers; their minutes abound with testimonials to his zeal, industry and tact. He died in office on 15 December 1912, having served the Hospital and School for 31

17 *Brit.J.dent.Sci.*, 17(1874), 344.

18 Quoted in the Bowdler Henry ms.

years.[19]

The beginning of the twentieth century, when the move across St Martin's Street to 32-39 Leicester Square took place, was a turning point in the life of the institution. The acquisition of the site and the erection of the building, the first purpose-built dental hospital in the country, presented administrative, legal and financial problems hugely greater than any which the Hospital authorities had so far encountered, and the pressure upon the individuals responsible must have been considerable. It brought about the withdrawal from active involvement of Sir Edwin Saunders, a temporary rift between the Hospital and the School, and a controversy over the incorporation of a public house.

The need for more space, if the Hospital was to maintain and extend its work, was recognised as early as 1886, as was the fact that the only practicable way of achieving this was by rebuilding. After consideration of several alternatives, the decision was taken to acquire sites in Leicester Square for the purpose, and the process of acquisition commenced in 1893. That the project was carried forward despite all difficulties and the opposition of Sir Edwin Saunders, who eventually resigned over the issue, seems to be due to the initiative and drive of Dr Joseph Walker, lately Lecturer in Mechanical Dentistry and Prosthetics and from 1892 Trustee and Treasurer. The importance of his role was acknowledged from the Chair at the Annual General Meeting in 1896, when the project was referred to as 'Dr Walker's Great Scheme'. Walker himself said that he could not have managed without the energy and determination of Mr Pink.

In the course of acquiring the sites needed for their new building, the Hospital found itself in possession of a public house, a rather shabby and disreputable one it seems — the 'Duke's Head'. Since the plan was that the ground floor of the new building was to consist of shop premises which could be let to produce income, it was decided to incorporate the 'Duke's Head', and application was made for the transfer of the licence. This attracted the opposition of the National United Temperance Council, on whose behalf Mr Charles Pinhorn circulated to the Hospital's Governors and Subscribers a pamphlet entitled, 'A Scandalous Proposal'. Here he accused the Committee of Management of seeking to extend and enlarge the public house 'for their own personal advantage' and included the following paragraph:

> The neighbourhood of Leicester Square is unfortunately the notorious hunting ground of the debased and profligate, and it is therefore an outrage upon decency that an institution receiving generous support from the Christian public should provide a rendezvous for such persons as are nightly to be found in this locality and thus bring into sharp contrast the hollow merriment of the fallen with the cries of the suffering.

19 All efforts to find out about this interesting man or to trace his descendants have failed, but a codicil to his will gives a tantalising glimpse of his character. He left all he possessed to his second wife, except for gifts of £25 to each of his four children by his first wife. These were to be invested and the interest used by each one to buy 'a new hat or bonnet' each year on their mother's birthday.

The Committee stuck to their guns, making the point that their duty as trustees was to maximise the profit from their acquisition. For several years they attempted to do this, but without success — the 'Duke's Head' never made a profit — and with an uneasy conscience. In 1903, at the Annual General Meeting, the Chairman tore up the licence 'amid applause' and the 'Duke's Head' was no more.

One of the conditions imposed by the Charity Commission in giving their sanction to the raising of a mortgage loan to finance the project was that the loan be repaid in thirty years or less and that until it was, 20% of the School's income be secured to the Hospital. This requirement was a matter for the Medical Committee, to the individual members of which was paid any excess of the School's income over its expenditure. They considered the contribution onerous and tried, unsuccessfully, to persuade the Charity Commissioners to reduce it. In the end, the Medical Committee accepted what they felt to be an ultimatum and agreed under protest. Notwithstanding this 'imposition', when towards the end of the project cost over-runs resulted in a deficiency of £2,000 and economies in equipping and fitting-out the premises were discussed, the Medical Committee came to the rescue in an ingenious way. They issued eighty bonds of £25 each, bearing interest at 4% payable out of the funds of the School, eight of which were to be chosen by lot and repaid each year. The sum raised was made available to the Hospital authorities on condition that the original plans for the completion of the premises were adhered to.

The new premises were taken into use in March 1901 and on 31 July of that year King Edward VII agreed to become Patron of the Hospital. Soon after, the institution was granted the title of the Royal Dental Hospital of London.

The mortgage loan (from the Prudential Insurance Company) was paid off in 1931, precisely on time. But, as is obvious from the record of projects abandoned or postponed for lack of funds, the years between were blighted by the struggle to pay the interest and instalments. In 1909 the Chairman at the Annual Meeting of Governors, while praising the standard of the building and the accommodation it provided, complained that the existence of the mortgage meant

> too few officials, one person doing two persons' jobs, too little painting and decorating ... a second Anaesthetic room only partially worked because we cannot afford a House Surgeon and a Nurse. No lift for either patients or staff, although the

building has five stories.

In 1985, when the Royal closed, the premises were sold for £7,368,550, of which the School's share, after deducting professional fees and the proportion claimed by the NHS authorities, was £3,651,431. This accrued to Guy's Hospital Dental School, making the latter a very lavishly endowed institution.

GLASGOW DENTAL HOSPITAL AND SCHOOL †

R. McKechnie *

This paper traces the establishment and subsequent development of Glasgow Dental Hospital and School from a small charitable hospital to the large and complex institution of today. It also looks at the context in which the Hospital began and the evolution of its present management structure.

Dental education in Britain before the middle of the nineteenth century was a haphazard affair. Although some lectures on the teeth had been given from time to time,[1] there was no systematic training available for dentists until the late 1850s and the establishment of the London School of Dental Surgery and the Metropolitan School of Dental Science in London. This resulted in very variable expertise among the practitioners of dentistry, a cause for concern to many dentists. A very few practitioners were medically qualified and yet others had served an apprenticeship to a dentist, but the majority of dental practitioners were poorly trained, if trained at all.

The passing of the Dentists Act 1878 did not improve the overall situation as much as some had hoped, since neither training nor registration (introduced

† Based on a paper delivered to the Oxford Conference of the Lindsay Society for the History of Dentistry, September 1997. The principal sources for the paper are the minutes (1885-1904) and reports of the Management Committee and the minute books of the Board of Governors (1904-20) of Glasgow Dental Hospital (located in Strathclyde Archives, Mitchell Library, Glasgow), the Council Minutes of the Faculty [now Royal College] of Physicians and Surgeons of Glasgow (located in the College Library, Royal College of Physicians and Surgeons, 242, Vincent Street, Glasgow), and T.Brown Henderson, *The history of the Glasgow Dental Hospital and School, 1879-1979* (Glasgow: W.S.Bisset & Son, 1979).

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1 James Rae (1716-91), for example, had the permission of the Incorporation of Surgeons of Edinburgh to deliver a course of dental lectures in Surgeons' Hall in 1764 (J.Boyes, 'James Rae 1716-1791', *Proc.R.Soc.Med.*, 46(1953), 457-60), although there is no documentary evidence as to whether he carried out this plan. William Rae gave similar lectures in London in the early 1780s and Joseph Fox began his own series at Guy's Hospital, London, in 1799.

by the Act) was made compulsory for practice. However, one aspect of the legislation was to make formal dental education a more practical proposition for those outside London. Although the Licence in Dental Surgery of the Royal College of Surgeons of England had been awarded since March 1860, few dentists held the qualification, in part because few provinicial dental hospitals and dispensaries[2] were recognised by the College until the late 1870s as providing experience answering the requirements of the Licence. Thus, after the initial amnesty which entitled dentists in practice to sit the examination *sine curriculo*, new entrants to the profession were obliged to undertake up to two years expensive study in London. The new Act gave authority to the Royal Colleges of Edinburgh and Dublin and the Faculty of Physicians and Surgeons of Glasgow to institute their own dental examinations and diplomas. In Glasgow the Faculty agreed immediately to implement the Act, and in November 1878 they appointed a Board of Examiners. In spite of dissent from some members of the Council opposed to regulations allowing existing dentists to sit the examination *sine curriculo*, the first examination went ahead and the Licence was awarded to four successful candidates: W.S. Woodburn of Glasgow, E. Melrose of Bolton, P. Gorrie of Dundee and T.J. Mulloy of Stockport.

It was now clear that a dental school was necessary in Glasgow to prepare students for the new licence. Anderson College, an educational institution, therefore set up a dental department and started courses of instruction. The managers of the College realised that these lectures had to be complemented by facilities for clinical instruction and training, and on 10 November 1879 set aside for this purpose rooms equipped with six specially designed operating chairs. The first course of lectures had already begun on 5 May and continued over the summer term. The beginning of the dental department and its hospital can thus be dated to 5 May 1879, nearly six months earlier than the dental school at Edinburgh was inaugurated (on 30 October of the same year). Glasgow Dental School can thus claim to be the oldest in Scotland.

Before sitting the examination, a student must have attended certain courses of lectures and to have acquired at least three years practical experience with a dentist registered under the Act. Many of the first students were already

2 Evangelical and humanitarian movements had given rise in the eighteenth and nineteenth centuries to the establishment of dispensaries for the poor. The middle of the nineteenth century saw the institution of specialist dental dispensaries, some of which became dental hospitals (for fuller details, see E.Muriel Spencer, 'Notes on the history of dental dispensaries', *Med.Hist.*, 26(1982), 47-66). No dental dispensaries appear to have been opened in Scotland, but some general dispensaries provided basic dental treatment: among the patients seen at the dispensary located in Paisley Town Hospital in 1845 were 4 with 'Disease of the Teeth' and a further 22 with 'toothache'.

in practice; they enrolled for the lectures and sat the examination whenever they felt able.

In 1884 the whole future of the School became doubtful. Anderson College where the School had been housed for five years urgently needed the accommodation, and it looked for a time as though all that had been gained would be lost. An urgent meeting of dentists was called for 25 January 1885. W.S. Woodburn was in the Chair and J.R. Brownlie proposed that a voluntary dental hospital should be set up in Glasgow without delay and that subscribers should be able to send suitable cases to the hospital. The proposal was adopted enthusiastically, and a committee was formed to carry the matter forward.

Premises were acquired close to Anderson College at 56 George Street, where on the 22 April 1885 the managers of the Glasgow Dental Hospital met for the first time. Advertisements were placed in the *Glasgow Herald* and *Glasgow Mail* for the various staff needed: four lecturers, six dental surgeons, six assistant dental surgeons and one house surgeon. The appointments were made on the 29 April 1885 and it was agreed to move into the new premises as soon as possible. This took place within a week, on 5 May 1885. Until now, the Hospital only opened in the morning, but now evening opening from 5 to 7 pm was started and immediately attendances increased.

Meetings of managers took place regularly, and one of the regular items on the agenda was the payment of staff. It was agreed at this meeting in 1885 that no payment should be made, at least for the present. However, it was decided that a secretary/treasurer should be appointed at a salary of 25 guineas per annum with a one-off payment of 10 guineas for his extra work connected with the move. Annual meetings of subscribers were usually chaired by the Lord Provost. At these meetings a report was given, detailing the work of the Hospital during the previous year. This included the number of attendances, the number of treatments and finally, a financial report. At the first annual meeting the Lord Provost expressed surprise that so many people in Glasgow were troubled with diseased teeth and that all the four thousand people who had attended the Hospital in the past year had their treatment carried out free of charge. To poor people, he said, this must prove a great boon. At the second meeting, the Lord Provost said that the Dental Hospital was the city's youngest charitable institution, but not the least important.

By the fourth annual meeting in January 1889, the Lord Provost, Sir James King, regretted that such an important institution should be able to raise less than £100 in subscriptions. He further commented that Glasgow Royal Infirmary, which had been founded about 100 years earlier, was also experiencing financial difficulties, and regretted that these two institutions were crippled by lack of funds. Five years later, in 1894, King was able to announce an increase in attendances and an improvement in the finances. He said that there

had recently been opened a large and admirably equipped dental hospital in London,[3] and while an institution so large might not be appropriate in Glasgow, something of the kind was absolutely necessary. He announced that a reserve fund was to be opened with a view to buying or building new premises. It was estimated that approximately £3,000 would be required.

In February 1890 the lease had run out on the George Street building and the Hospital had moved again, this time to Chatham Place, a less central location off the Stirling Road. The pressure on available space in Chatham Place was by now, 1894, becoming intolerable, so in spite of a lack of funds, it was decided to start a search for more suitable premises. A lease was eventually taken out on 11 February 1897 on the top floor of a building in St Vincent Place, close to both Anderson College and to George Square. The rent was £70 per year, plus 10% of the cost of alterations. It was also agreed after further discussion to install the new electric light at a cost of £45. In December of that year the Secretary of the Royal College of Surgeons of England wrote to the hospital to say that 'The Glasgow Dental Hospital shall now be added to the list of Dental Hospitals recognised by the Royal College of Surgeons of England'.

The Hospital was now well established. Around 7,000 patients were attending every year, and the public were becoming appreciative of its work. The St Vincent Place premises, however, were far from adequate, although much more spacious than either George Square or Chatham Place, but because of a chronic shortage of money, they were in a poor state. At one point a floor was in danger of collapsing and needed urgent repair. At a meeting of staff in February 1899 it was resolved that on the expiry of the present lease in five years time, attempts should be made to secure a permanent home, such as those enjoyed by the dental hospitals in Manchester, Liverpool, Birmingham and other large towns.

In December 1899 the Committee of Management produced a draft Constitution. A number of changes were introduced, but most importantly, the word 'School' was officially added to the title. At its first meeting after the adoption of the new constitution on 12 March 1900, the Committee of Management reappointed the existing staff, headed by the Dean, J.R. Brownlie. This was a period of expansion, with a clerk being appointed in 1901 to supervise the giving out of materials to students, who now numbered 26. Several grants were received, including £500 from the Trustees of the late Adam Teacher and £500 from Lady Lithgow of Langbank. It was hoped that within two years

3 The Great Portland Street building of the National Dental Hospital (later the University College Hospital Dental Hospital) opened on 24 February 1894 (J.A.Donaldson, *The National Dental Hospital, 1859-1914* (London: British Dental Journal, 1992), p. 63.

premises would be found which were central, more suitable in character and more ample in accommodation.

The search for new premises culminated in the purchase of Dr Lothian's House, at the corner of Dalhousie and Renfrew Streets, for the sum of £1,225. Estimates amounting to £799 16s 9d were approved for conversion work, which was to include the installation of a telephone. The upper flat — the operating room — 1,921 sq.ft. in area, was glass-roofed and equipped with 40 of the most modern pump chairs, each with its own special pendant light fitting, making it one of the finest in country, according to a report to the annual meeting of February 1903. (While conversion was in progress, the Committee were served, unsuccessfully, with an interdict by a Mr Reid, the owner of the ground floor flat, who alleged that the building work going on had caused damage to his property). The move to Dalhousie Street was finally complete by early 1904.

Since it now owned heritable property, on 23 September 1904 the Hospital was incorporated under the Companies Act as an institution existing for philanthropic and educational purposes. Under the Act, the Management Committee was superseded by a Board of 18 Governors. This met for the first time on 10 October and appointed all members of staff to a Dental Committee, which would consult on, and supervise, all matters connected with the practical working of the Hospital and School, and report back to the Governors. The Dean was to preside over this committee and submit a monthly report which was to include details of the attendance of staff and students, then numbering 42 (a further 18 enrolled during the year). The Board also appointed a Finance Committee.

In April 1905 the Dental Committee was superseded by a House Committee. This had similar duties, but in addition, was to supervise the details of management of the Hospital and its heritable property, for financially the institution was still in trouble. Income just covered expenditure and the Board were rightly concerned, although a few grants were still being received (£50 from the Bellahouston Trustees and £50 from the Faculty of Physicians and Surgeons).

At the same time Brownlie resigned on the grounds of ill health, and it was decided that in future the Dean should be appointed for a fixed, but renewable, term of office. It was also agreed that he should be required to attend the Hospital on an appointed day, once a week, and to call a meeting of staff once a month. He should additionally have sufficient funds at his disposal to procure clerical assistance.

The First World War had a serious impact on the Hospital. Many of the staff, including the Dean, went off on active service, and the attendances steadily dropped until in 1918 only 6,607 patients attended, compared with

17,260 in 1914. However, with the end of the War, student numbers had increased dramatically (from 18 in 1917 to 163 in 1921),[4] as had patient attendances; to cope with this, a new afternoon session was started from 3 pm to 5 pm and in 1923 a new mechanical laboratory opened with a full-time tutor appointed at a salary of £300 per annum (visiting surgeons were still unpaid, but the Board now agreed to pay each an honorarium of £50). It was clear that the increased numbers of both students and patients necessitated further expansion, and in 1924 the Governors approached the Dental Board of the United Kingdom for help. The Board agreed to make a grant of £5,000 towards the cost of a new hospital, and so the search for a new site started once again.

In October 1926 this was found at 211 Renfrew Street, conveniently close to the Dalhousie Street premises. The following year the Governors approved plans for a new building. The estimated cost was £45,000, a truly huge sum, towards which the Dental Board had pledged £5,000 plus another £1,000 for equipment. Fund raising efforts were started and, although carried out with great enthusiasm, the results were meagre. The Dental Board then offered another £2,000 and a contract was signed with the builders, Melville Dundas and Whitson, who assured the Governors that they would not press unduly for their payments. The new building was opened by Sir Ian Colquhoun on 31 May 1932.

An appeal was immediately launched for the £27,000 still outstanding. Two years later there was still £22,000 needed, and the builders were becoming more than slightly unhappy. Mr Alexander, whose father had been the first Secretary in 1885, resigned over the Governors' reluctance to take out a bond so that the builders could be paid. Eventually, however, the Governors were forced to accede.

It was now decided that the time had come to appoint a full-time Dean. The Dental Board agreed and undertook to contribute £500 a year towards the salary for five years, but on certain conditions. First, the Dean should retire at the age of 65; second, the salary should be a minimum of £1,000 a year; and finally, there should be an Almoner's Department to ensure that dental treatment was restricted to necessitous persons. Under these new conditions, J.Forbes Webster (who had held the post since 1924 when R.S.Grant resigned) was reappointed Dean on 1 April 1936 at a salary of £1,250 per annum (the

4 The rise in the number of students (most of whom ere ex-servicemen) is likely to be due, to some extent, to schemes designed to encourage dental technicians to train as dentists on demobilisation. The post-war rise in the number of patient attendances was in part an expression of a pent-up demand carried over from the war years when the Hospital had operated with a very reduced staff, an improvement in facilities and perhaps the rising expectations of ex-servicemen who had experienced dental care for the first time during their war service.

Articles of the now incorporated Dental Hospital had to be changed, as they restricted the Dean's salary to 50 guineas). A new mechanical laboratory was now in use and the Dental Board offered £250 a year towards the salary of a full-time lecturer in Dental Prosthetics and Mechanics, providing the salary was not less than £600 per annum. (W. Malcolm Gibson was appointed to this post on 1 October 1937). The Dental Board expressed the hope that closer links would be formed between the School and the University, leading to amalgamation. The revised Articles allowed for the appointment of a University representative to the Board of Governors, as well as representatives from the Faculty of Procurators and the Institute of Accountants and Actuaries.

On 12 July 1938 the outstanding £3,000 on the bond was paid off. The institution's financial problems were, however, not yet solved, for in 1941 the Dental Board decided not to renew their contributions to the salaries of either the Dean or the Lecturer in Prosthetics, as they were not convinced that all treatment provided by the establishment was under the control of an efficient Almoner's Department. The Governors immediately obtained the services of the City of Glasgow Society of Social Service at a cost of 50 guineas a year, and this satisfied the Board.

Dr Webster was now approaching 65 and a successor had to be appointed. The post was advertised as requiring a qualified dental surgeon who also held a medical qualification, at a salary of £1,500 per annum. The necessity for applicants to have a medical qualification was strongly opposed by the staff, and the *British Dental Journal* refused to carry the advertisement. As a result, this requirement was subsequently deleted. For some time discussions had been taking place with the University on possible affiliation, and considerable progress had been made; so much so, that Sir Hector Hetherington, the Principal, was asked to advise on the appointment of the next Dean. He suggested that, in view of the likely affiliation with the University, the appointment should be delayed until amalgamation occurred and Dr Webster continued in office until 30 September 1947. The next day, 1 October 1947, the Dental Hospital became part of the Medical Faculty of the University, and the new Dean, James Aitchison, took office.

In July 1948, with the establishment of the National Health Service, the Dental Hospital and School transferred to the State. The management of the Hospital was now vested in a Board of Management appointed by the Western Regional Hospital Board, who in turn were appointed by and responsible to the Secretary of State for Scotland. The Hospital Board of Management was composed largely of former Governors and senior members of staff. Alexander McGregor was appointed Chairman.

The Hospital's role now changed fundamentally. For the first time it became a reference centre and provided specialist dental services for the whole

of the west of Scotland. To meet the increased demand, the staff was augmented and many full-time posts were created. The finances of the Hospital, for the first time in its history, were now on a stable footing. Dental staff were graded on an equal basis with medical staff and consultant appointments were made by the Western Regional Hospital Board. The Board of Management was responsible for paying junior staff whilst the teaching staff were now the responsibility of the University.

It rapidly became clear that because of the vast increase in the workload and staff, the accommodation was once more insufficient. In 1955 the Board of Management persuaded the Regional Board and the Secretary of State to purchase an adjoining tenement building and, more importantly, a villa whose grounds went down the hill and fronted Sauchiehall Street. In 1958 a joint planning committee was set up to produce plans for a new hospital building on this site. The planning committee had representatives of the Board of Management, the University and the Regional Hospital Board. Work started in the autumn of 1966. (By now Aitchison had retired, to be succeeded as Dean in 1964 by T.C.White; Baillie W.N. Samuels had replaced Alexander McGregor as Chairman of the Board of Management). The work took four years to complete, and the new building, which had been envisaged merely as an extension, was now seen to dwarf the old Hospital as it extended from Renfrew Street to Sauchiehall Street. It was officially opened in December 1970.

Over the next few years, while staff, students and patients were settling into the new accommodation, further changes were taking place in NHS Management which in April 1974 adopted a completely new structure. Regional Hospital Boards in Scotland were replaced by fifteen Health Boards and the Dental Hospital became part of the Eastern District of Greater Glasgow Health Board. This was one of five districts in Glasgow and was responsible for the management of several hospitals, including the Royal Infirmary and Canniesburn. The District was managed by an executive group, whose dental representatives were Dugald Campbell (the District Dental Officer) and the Dean of the Dental School (T.C.White). The Health Board also had dental representation in the person of the Chief Administrative Dental Officer (CADO); another member of the new Board was a respected dental practitioner, T.B.Henderson, who had been a visiting dental surgeon to the Dental Hospital, as well as a member of the former Board of Management.

District Management continued until 1986, when yet another major reorganisation took place. There had been criticism that the NHS was not sufficiently business-like or efficient. A new structure was set up to answer this criticism, and in 1986 the Board appointed its first General Manager, Lawrence Peterkin. The CADO was made the Manager of the Dental Hospital and a small executive group was set up. This comprised the Dean, the CADO (as

Chairman), two staff representatives, a finance officer from the Board and the Hospital Administrator. This group met weekly and managed the Hospital for the next five years.

The old Districts were then replaced by Trusts. They were to become providers of health care, while the Health Boards would be purchasers. The Dental Hospital, however, did not fit readily into the conventional pattern. It was wholly outpatient, provided primary care carried out by students and, although a reference centre for the whole of the west of Scotland, it had no direct competition. Yet, it had still to fit into the overall NHS management structure, and in 1991 the Hospital's first professional manager was appointed.

The Hospital became a separate trust in 1995 but the future of both Trusts and Health Boards is itself now in doubt. Either level of management could be lost and decisions will be made on this soon. Perhaps the most important factor in making the decision about the Hospital's administrative future will be cost. In NHS terms, the Hospital has a small budget, there is at present no mechanism for 'money to follow patients' and costs appear to be high. In 1884 the total running cost of the Hospital was £28, in 1894 £230; even up to the First World War, it was still under £1,000. In 1996 the annual running costs were £9.5 million, of which management and administration accounted for £1,202,800 or 12.4% of the total. The cost of the Trust Board adds a further £349,200, giving an administrative total of £1,552,000, or 16%. Can a small hospital afford this? Would it be cheaper to merge it with another body? On the other hand, dental education and specialist dental treatment are intrinsically costly and the buildings and their equipment very expensive assets which deserve the very best management.

Many dental hospitals were set up, like general hospitals before them, to provide free treatment for the poor, as well as to train dental students. They have developed from that point and to them must go much of the credit for the transformation of the practice of dentistry from (to use Menzies Campbell's words) a trade to a profession. Today NHS dental treatment is difficult to find in some areas, but the alternative is expensive for many people. The training of students apart (and Glasgow has for many years received more applications from well qualified candidates than it had places to offer), the Hospital still meets a primary care need and the number of referred patients is also rising. It seems likely that, even if undergraduate training were contracted in the face of some future restructuring of the dental profession, bearing in mind the cost and logistics of setting up alternative facilities for secondary care and postgraduate training in this part of Scotland, the survival of the Glasgow Dental Hospital seems assured at least for the foreseeable future.

ROUND TRIP:

political influences on the provision of dental care in the twentieth century †

W.T.Sholl *

The purpose of this lecture is to remember Lilian Lindsay and to put the fiftieth anniversary of the start of the British National Health Service (the NHS) into the context of history. I intend to show that history has continuously moulded the provision of dental care and that the profession can influence that process for the common good.

In 1895 Lilian Lindsay was the first woman to qualify in dentistry. She was sincerely rebuked for taking a living from another dentist and therefore the bread from his children's mouths. Dental care at this period was a matter of insurance by the man of the house and many dentists were artisans.

Fifty or so years later, on 2 July 1946, Lilian Lindsay was installed as the first woman President of the British Dental Association at Edinburgh, four months before the NHS Act received the Royal Assent and not long after the end of the Second World War.

This war had affected every family in the land, not only through conscription (this had been experienced in the Great War) but also because the targets of enemy action had been civilian and industrial as well as military. This engendered a national spirit of defiance, a purpose and an eventual victory which were the mainsprings for nationalisation by socialism. At the end of World War II, a high proportion of almost four thousand dentists demobilised from the armed forces, wanting to get on with life and have families postponed by the war, ignored the advice of the BDA, put up a brass plate and signed up for the NHS with its free universal state provision of general dental services. (In the event, dental care in general practice has not been free of cost for the

† A resume of the 4th Lilian Lindsay Memorial Lecture delivered to the Lindsay Society for the History of Dentistry on 25 April 1998 at the Annual Conference of the British Dental Association, Harrogate.

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majority since the financial crisis of 1950. The sole alternative to the imposition of charges facing the Cabinet only eighteen months after the start of the NHS was the suspension of services).

Both World Wars had involved the whole Empire and post-war Britain has relied for manpower on immigrants from the Commonwealth, many of whose children availed themselves, as did the population at large, of the access to higher education afforded by the 1944 Education Act and entered the professions. (It would appear that the commonest name on the *Dentists Register* is now Patel). In contrast with Lilian Lindsay's time, a high proportion of today's dentists are female. Now, after fifty years of peace, we live in a mixed economy, the standard of living is generally very much higher and dental insurance becomes daily more common. State involvement in the provision of dental care is moving towards targeting those who suffer poor oral health and a hundred per cent payment of nationally fixed fees has been approached. Ninety per cent of the dental care in this country is provided privately and confidentially in practices scattered across the land.

These three, sharply contrasting, scenarios for dentistry at the beginning, middle and end of this tumultuous twentieth century, show, in some respects, how the third party involvement of the State has come full circle and how the provision of dental care in this country revolves around political events.

For a thousand years, from the sixth to the sixteenth centuries, welfare was provided through the Church and there can be no doubt that the ethics of modern professions derive from the priestly requirement for confidentiality. Henry VIII's declaration of independence of the political power of ecclesiastical law emanating from Rome was the spur to the creation of the English nation state. His daughter, Elizabeth, became not just Queen of the English but Queen of England. Welfare became a secular matter and the Poor Law was established, based on the parish. This system was not finally replaced until the Atlee government, elected in 1945, some four hundred years later.

Lilian Lindsay, born in 1871, was a Victorian. She did not marry until she had cleared the debts she had incurred in training and setting up a practice. She was already 28 years old at the outbreak of the Second Boer War. This war, many thousands of miles away in the southern hemisphere, was to have a profound effect on the British Empire, for it pinpointed its vulnerability. Germany had unified under Bismark, international competition was increasing: there was a need both to increase the population to run the Empire, and to make the labouring poor fitter to compete. Interrelated with this was the necessity to alleviate poverty, especially among the elderly. A means-tested Pension Act 1909 was passed by a Liberal Government but when Lloyd George presented his 'People's Budget' in 1909, supported by Churchill, the Lords would not accept it. It was considered unconstitutional to tax the population and, by law,

take money from one person and give to another, no matter how deserving the cause. A general election was held on the issue, the Liberals were overwhelmingly returned and the ensuing Parliamentary Act of 1911 has meant that the Commons have had fiscal authority in Parliament ever since.

The National Insurance Act 1911 established compulsory insurance for sickness and unemployment with approved societies which distributed funds through an existing network of self-help friendly societies, trades unions and the like. Five yearly reviews took place of each society and surplus funds were used to grant additional benefits, including those for dental and ophthalmic treatment, on a national narrative of items, terms of service and scale of fees. Patients usually paid 50% of the cost of treatment and, provided they were properly paid up, would be issued with a letter from their approved society — the precursor of the EC17 — for the dentist to claim his fees on their behalf. The 1921 Dentists Act, which established compulsory registration and set up a state reference service of regional dental officers, introduced state participation into the dentist/patient relationship. This system was primarily for the benefit of the working man and his family, but the approved societies of riskier occupations were unable to declare a bonus and therefore could not provide dental benefit.

In 1942 William Beveridge produced his famous report. His was the only signature, and the realisation of his proposals became a personal crusade, a war on Want, Disease, Ignorance, Squalor and Idleness. Six hundred thousand copies were bought; it became a cause for victory. His proposals were that every person should be part of a scheme of national insurance, covering health and rehabilitation. Dental treatment was included in his scheme but he was adamant that the entire self-financing plan would require the fulfilment of several conditions, including full employment and a building up of reserves. Every adult was to be treated equally, paying the same premium and receiving the same cost benefit.

Although the report was passed by the War Cabinet, the Labour Government of 1945 had other ideas. The Minister for Health, Aneurin Bevan, did not think it fair for the working classes to be burdened by premiums and, in his own words, 'attacked property through the democratic process'. The scheme of national insurance for health was replaced with one of national provision by nationalisation, as with many other services and parts of industry.

The NHS Act of 1946 established dental consultant posts and hospital services but did not include general dental practice. This had become the subject of an Interdepartmental Review, principally because, unlike the case of general medicine, there was no way in which dental treatment could be guaranteed to the population. The notes of the Cabinet Meeting of 13 December 1945 read as follows:

> Dentists working whole time or part time in Health Centres or Dental Centres will be remunerated entirely by salary, in proportion to their attendance at the Centre. Supplementary arrangements will be made, while the Centre is developing, whereby dentists accepting any patient under the public service in their own surgeries can be paid on a scale of fees for approved work done. This scale can provide for payment for minor or urgent work on claims submitted after the event (to avoid delay for patients) but for more substantial work, the dentist will submit what he proposes to do for approval by a new small professional body, which will have branch offices about the country.
>
> All remuneration of dentists, by salary or under scale of fees, will be fixed by national regulations and will have regard to national standard recommendations, by a body analogous to the Spens Committee for doctors, or other body set up for that purpose.

The NHS Act 1946 abolished approved societies but as dental practices were not nationalised, and until local clinics could be built and staffed by salaried dentists, the old item of service system had to continue. The National Amalgamated Approved Society (a combination of some of the dental, and other, claims departments of various approved societies, evacuated to Eastbourne for the war), was nationalised to process claim forms as before. The Dental Estimates Board can be seen as the one surviving approved society, with a board mostly composed of dentists, pending the nationalisation of services.

In the event, with premiums and patient fees discontinued, the demand far exceeded the estimated cost. No government has ever managed to reduce patients' fees, introduced in 1950, let alone provide a free and salaried general dental service akin to that existing for medicine. The terms 'NHS patient', 'NHS dentist' and 'NHS treatment' have never appeared in the regulations and the patient/dentist relationship remains private, still subject to liberty and common law. Treatment remains the property of the patient.

Now, at the end of the century, socialism has been largely replaced by consumerism regulated by the democratic process. We have not returned to the Victorian liberal constitution with its free trade, however, but enjoy an illiberal, centralised, democracy. Monopolies — like trade unions, professions and quangos — are out of favour. Professions are now forced to advertise and made to accept equal numbers of men and women for training. Democracies world-wide are struggling with the costs of health, education and social services. The purchasing of services for target client groups, rather than universal provision, is the path being followed.

As long as quality assurance control by health authorities and other purchasers is in place, why should clinical dental technicians not be employed, as in New Zealand? Why not let practices be owned other than by dentists? Why not make dentists and providers compete for business and bid for their own patients? Why not have Tesco teeth? Why bother with professionals at all?

The answer is given by Lilian Lindsay in her Presidential address of 1946:

> Be prepared to do any work that comes to your hands and to let your duty shape its own course.

Here she referred to the work of dentists in the recent war. The mid-century ethos was akin to the Scouts' Promise rewritten for dentists:

> On my honour I promise that I will do my best for my patients, to do my duty to them, to help other people at all times and to obey the law and the ethics of my profession.

The likely mission statement of a 1998 dental practice could hardly be more different:

> We promise to adequately follow the quality control regulations of third party purchasers of our clients' dental care, to comply with political correctness, to only advise and treat clients in contract with us, with witness and annotation at all times to justify actions in law, to only act as allowed by British and EU regulations and by proscription of the profession.

At the end of the twentieth century political correctness and consumerism have become political powers displacing the socialism under which the NHS was set up. Political power needs to be balanced by apolitical institutions, such as the professions, with codified morals called ethics. It is no coincidence that a new international Hippocratic Oath has been instigated to preserve professional discretion world wide. Is it not time to mark the second millennium, as we now call ourselves 'doctor', by establishing the use of that 2,000 year old oath in dentistry linked to a core vocational training? This could lead to the reinstatement, as democratically elected representative bodies of all dentists, of Local Dental Committees, as set up in 1948, with their original powers to investigate over-prescription; all third-party providers might be required to seek and take their professional advice and be accredited by the profession.

Professionalism is the proven and preferred means of preserving the integrity, freedom and provision of our citizens' dental care, not returning down the road of trading with the loss of professional relationship and discretion. In a liberal society, dentistry must remain the property of the people, not of politicians or providers. The Human Rights Bill now going through Parliament is essential in this respect.

ROBERT LINDSAY:

a quiet but influential figure

E. Muriel Cohen *

Robert Lindsay is now little more than the half-forgotten husband of Lilian Lindsay who has surpassed him in the annals of dental history. In his lifetime, however, he was both eminent and respected in his own right.

He was born on 12 December 1864, the second son of James Lindsay, a tailor, and his wife Mary (née McGregor), who were married at Dundee on 2 August 1855 and then moved to 7 Cannon Street, Edinburgh where their three children were born. Of Jessie, the youngest, almost nothing is known, but the eldest, James, was apprenticed as a dental mechanic to William Bowman Macleod, whose practice at 16 George Street in Edinburgh was one of the best in the city. Macleod was also Dean of the Edinburgh Dental Hospital and School where James registered as a dental student in 1879. He qualified in April 1882 and within a few months was appointed to the staff as assistant dental surgeon; in 1889 he joined the senior staff. He resigned in November the same year and died, probably from tuberculosis, on 3 January 1890. It is likely that James never owned his own practice, but worked as assistant to Macleod.

In several respects, Robert followed in the footsteps of this elder brother. He was educated at Bellevue School and at George Heriot's Trust School, and in 1879, aged 14, was apprenticed to Bowman Macleod as a dental mechanic. Like James, he was retained as an 'improver' in the George Street practice and was eventually promoted to be the head of the workroom. Macleod did high-class dental work and Robert was a first-rate mechanic with a special aptitude for wrought gold work, an aspect of workshop practice upon which the skill of the mechanic was judged. Again following James, Robert registered as a dental student in 1890 and two years later started part-time classes at Edinburgh Dental School while continuing to work in Macleod's practice. (Besides financing his own education, he assumed his brother's responsibility for supporting his parents and sister after James's death). Not surprisingly, as a

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student he gained a medal for dental mechanics as well as awards for practical chemistry and for physiology. On 4 May 1894 — at the age of twenty-nine and one year before Lilian Murray became the first woman to gain the LDS at Edinburgh — Robert qualified and was appointed tutorial dental surgeon at the Dental Hospital. Here he lectured on the new subject of dental metallurgy, subsequently becoming an external lecturer on that subject at Manchester and Dundee. He was noted for making even the indifferent students realise that there was more to the dental profession than merely earning a living. Between 1894 and 1919 he was also in dental practice at three addresses in Edinburgh.

Robert was a serious-minded person who in his leisure followed sober pursuits. In his student days he had been an active member of the Dental Students' Society, presenting papers, auditing the accounts and serving on the council; after qualifying he became its vice-president and in 1896 its president. Outside dentistry he took classes at St Mary's Sunday School where he became superintendent, and was an ardent member and office-bearer in the Literary and Fellowship Associations of that church. During the First World War he joined the Edinburgh Volunteer Corps as a private (he later received a commission) and spent one night each week at the Boys' Brigade Hut, open all night to provide shelter and refreshment to soldiers. He enjoyed climbing, playing tennis and walking, a pleasure shared with his future wife.

Robert's first meeting with Lilian Murray, when he was asked to show her round the Dental School, is described in the autobiographical account of her early life.[1] He enquired why she had thought of dentistry as a career, and she replied, 'I had to earn my living and I thought I might as well do so in dentistry as in anything else.' He was grave and answered, 'If that is your only reason, give it up at once.' She recalled,

> This came like one of those shocks which have proved almost miraculous ... From that day I began to realise that the debt I owed to my profession was of equal importance to the debt I owed as a citizen.

Such was the attitude Robert encouraged in his students. At the end of her autobiography Lilian wrote,

> Robert Lindsay and I had found that we loved each other, but as we were both without means and with heavy responsibilities, we had to part without any immediate hope of marriage.

1 E.M.Cohen and R.A.Cohen, 'The autobiography of Dr Lilian Lindsay', *Brit.dent.J.*, 171(1991), 325-28, on p. 325.

In Lilian's case, these responsibilities were probably to repay debts incurred in setting up in practice in London, and also to help in the education of her eight younger brothers and sisters. Upon Robert fell the obligation to support his parents and sister; very probably he too had had to borrow money to set up in practice. After ten years the debts were paid off and marriage was possible. The wedding took place on 26 July 1905 at St Luke's, West Holloway, London, two days after Lilian's 34th birthday; Robert was aged 40. They returned to live in Edinburgh at 2 Brandon Street, over the practice where Lilian joined Robert as a dentist. According to *The Scotsman* for 27 July 1905 the Lindsays would be 'At Home' on 7 and 14 October.

From the start the couple were involved in each other's ventures. When Robert became the Secretary of the Odonto-Chirurgical Society of Scotland, which he had joined in 1894 (and of which he was made an honorary member on leaving Edinburgh for London), it was Lilian who wrote the minutes for him. Keen readers of the works of Charles Dickens, they joined the Edinburgh Branch of the Dickens Fellowship. In politics they were Fabians.

The Lindsays would probably have remained happily in Edinburgh, but in 1919 their lives took a different turn, thanks to political developments in the profession. Unqualified practice was rife at this time but the general public seemed unable to distinguish the registered from the unregistered dentist. This only encouraged extensive malpractice and led to the lowering of the social status and public esteem of the dental profession and a consequent shortage of recruits. In addition, registered practitioners were unevenly distributed geographically, and generally found only in the larger centres of population. Sir Francis Dyke Acland had chaired a committee set up by the Privy Council in 1917 to amend the Dentists Act 1878. In 1919 it published a detailed survey of the horrifying state of dentistry in Britain and recommended that the law be altered to prohibit the practice of dentistry by the unregistered. In the light of these events, the British Dental Association reviewed its administration.

Since its founding in 1879, the Association had been run by dental practitioners on a voluntary basis, the office of honorary secretary having been held by eight notable members of whom two were honoured with knighthoods. In 1905 the post of full-time lay secretary had been instituted and the paid office staff gradually increased. However, it was felt in 1919 that the time had come for the Association to appoint a dentally qualified secretary, particularly in view of the necessity to draft new legislation. To this position of Dental Secretary they appointed Robert Lindsay, who took up his duties in January 1920 at 23 Russell Square (acquired in 1919 as the first real home of the Association) and moved into the flat on the third floor which went with the appointment.

When he left Edinburgh, Robert's colleagues proved their warm regard for him by presenting him with a farewell dinner and a gold watch, his most

treasured possession. In accordance with their political and social views, the Lindsays did not sell their practice on moving to London, but recommended the patients to dentists of whom they approved.

Lindsay was already involved with the affairs of the British Dental Association, as had been his brother James who in 1882 was one of the 29 Scottish dental surgeons to initiate the Scottish Branch of the Association. Robert himself had held various offices in the Branch, including that of President in the 1911-12 session. He had also for some years been a member of the Association's Representative Board. He became interested in a public dental service and in 1912 urged the Association to initiate a scheme of public health dentistry. He subsequently became Chairman of the Public Dental Service Committee, and decided to devote himself and his abilities entirely to the Association after his appointment as Dental Secretary.

Robert Lindsay dedicated himself initially to the planning, drafting and promotion of the Dentists Act 1921. The practice of dentistry was to be restricted to registered dentists, registered medical practitioners and, to a very limited extent, to registered pharmacists. If practising unregistered dentists of some years standing (and some others without qualifications) applied within a given time limit, they were to be eligible for entry to the Register. The Dental Board of the United Kingdom (chaired by Sir Francis Dyke Acland) was set up as a subcommittee of the General Medical Council, the body which had to approve any recommendations proposed by the three Dental Board members appointed to sit on the Council when dental business was on the agenda. The General Medical Council also controlled dental education. The Dentists Act 1923 extended the time for registration of those in practice before 1921, but henceforward all those applying for registration had first to obtain a dental qualification. The unqualified '1921 dentists' were denied membership of the British Dental Association in referenda in 1922 and again in 1927.

In addition to his work on the Dentists Act, Robert Lindsay also supervised the routine business of the Association, which in the eleven years of his tenure of office greatly increased its services to members and widely extended its sphere of influence in Britain. His intimate knowledge of the complicated methods and machinery of the public dental service stood him in good stead when dental treatment was included in the benefits of some of the Approved Societies. He travelled tirelessly to the branches of the Association, winning support by his clarity of thought and expression for the policies he had shaped on behalf of the profession. His diplomacy and energy, his quick perception, his clear insight into human nature, his long experience and a rare gift of sympathy won him friends wherever he went. His obituary states,

> Although a man of strong convictions and convinced opinions, his honesty of purpose was so transparent, his tact and good humour so unvarying, that he never made an enemy.[2]

Robert Lindsay's sudden death on 4 November 1930 came as a great shock to his colleagues. In September he had spent a month in Italy, part of it attending the History of Medicine Congress in Rome. At the meeting of the Representative Board of the British Dental Association on 11 October he had seemed in his usual health. According to his death certificate the causes of his death (certified by Dr William M. Fairlie) were intestinal obstruction, adhesions of the peritoneum and tuberculous peritonitis.[3]

Some have represented Robert Lindsay as austere and autocratic; it is clear that his wife did not find him so. He was certainly the head of the partnership between them, but a devoted and happy partnership it was. Still in existence are letters and a diary written by him to Lilian in 1926, extracts from which it is hoped to publish in due course, and these reveal his private character and prove the deep affection and shared interests which the two enjoyed.

ACKNOWLEDGEMENTS

Grateful acknowledgement is made to Mrs Jean Boyes for kindly making available notes on Robert Lindsay collected by the late Professor John Boyes which particularly elucidated his early life.

2 Obituary, *Brit.dent.J.*, 51(1930), 1248.

3 Registrar General, certificate of death.

A NEW SET OF NOTES ON THE LECTURES OF WILLIAM RAE (d.1786)

Christine Hillam *

The notebook and its compiler

Recently donated to the Library of St Thomas's Hospital, London,[1] was a fat notebook of over 800 pages bound in calfskin and measuring 19cm x 13cm x 5cm (7½in x 5in x 2in).[2] The flyleaf refers to St Thomas's Hospital and there follows a mass of handwritten notes on lectures, presumably delivered there, since p. [vi] bears the words

Theatre
St Thomas's Hospital
1783

Page [vii] announces the contents as *Fugitive Extracts interspersed with Practical Remarks on Anatomy and Surgery delivered by Mr Cline 1783*, and indeed the first 250 pages or so are taken up with notes on Henry Cline's lectures of that year.[3] Later contents include notes on a lecture on inoculation given by

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1 By Mr John Winstanley, MC, TD, FCOphth, retired Consultant Ophthalmologist.

2 The binding is over boards with three recessed sewing stations. The tailband has broken at one point, but is being held together by an additional strip of leather glued across the back of the book and bottom of the spine. Some care has been taken in the presentation of the binding, shown by the rather modest use of blind tooling around the edges of the front and back covers as well as on the spine. The manuscript has been trimmed. In the course of rebinding, the text block has been stained and a wavy pattern has been impressed. The binding is near-contemporary with the text, and is probably of English origin (personal communication from Dr Maureen M. Watry, Head of Special Collections and Archives, University of Liverpool).

3 Henry Cline (1750-1827), later to be the dedicatee of Joseph Fox's *The natural history of the human teeth* (London: Cox, 1803), was a surgeon at St Thomas's from 1784-1812 (D.T.Bird, *Catalogue of Books and Manuscripts in St Thomas's Hospital Medical School*

Edward Jenner which quote a letter (dated 21 June 1801) written to Joseph Fox by Dr Marshall in Valletta (pp. 317-19), and notes made on a series of lectures on midwifery (pp. 380-497). Further 'fugitive extracts' captured by the compiler relate to *materia medica* (pp. 501-05), case histories dating from 1804, 1805 and 1807 (pp. 507-45) and various items and cases of interest copied from the pages of the *Medical Journal* and the *Medical & Physical Journal* for 1802, 1804, 1805 and 1817 (pp. 728-98). All the notes (written on both sides of the page) appear to be in the same hand, though executed with varying degrees of formality and neatness.

A substantial number of the pages are left blank,[4] but between pages 256 and 314 are to be found

Remarks on the
Oeconomy & Diseases of the
Teeth,
with the most improved Methods
of
Operating
Collected from a Course of Lectures
delivered by
Mr.Rae
1783

At first sight, it appears that here we have the notebook of a student who attended lectures at St Thomas's Medical School[5] in 1783, and to his notes on these lectures added, in a rather haphazard manner, various oddments which caught his eye any time up to 1817. However, closer examination of the book reveals a different sequence of events: the watermarks to be found throughout show that it was made from paper produced in 1799, 1800 and 1801 by Hayes and Wise at Padsole Mill, Maidstone.[6] In other words, the notes must postdate the 1783 lectures they purport to record by nearly twenty years.

(1491-1900) (London: [n. pub.], 1984), p. 15). He had, however, been delivering lectures on anatomy and surgery at St Thomas's on behalf of Mr Else since before 1781 (F.G.Parsons, *The history of St Thomas's*, 3 vols (London: Methuen, 1934), 1, p. 240).

4 pp. 249-55, 320-79, 489-500 and 547-727.

5 And possibly at Guy's Hospital Medical School as well, since except for the period 1760-68, the two schools were united until 1825 (Bird, p. 13).

6 Alfred H. Shorter, *Paper mills and paper makers in England 1495-1800* (Hilversum: Paper Publication Society, 1957), p. 186. Fig. 82 in the same publication illustrates a Hayes and Wise watermark.

A possible explanation for this conundrum lies in scattered clues. On page [iii] we read

J.W^m^ Valantines
1802
Doncaster

(presumably the owner of the notebook and the date on which he embarked on his enterprise) and the end of the notes on Rae's lectures is marked by a flourish and

Finis
July 2nd 1802

This seems likely to refer to James William Valantine, born in Doncaster in 1782[7] and apprenticed on 3 November 1796 for 6 years 6 months to Leonard Towne, a chymist, druggist and grocer of Gainsborough, for a premium of £31.[8] Perhaps in 1802, the last year of his apprenticeship, Valantine had access to notes made nearly twenty years before by a student at St Thomas's, acquired a dauntingly thick new notebook and proceeded to copy out those which interested him or which he thought would be useful in the future: the surgical lectures of Cline and those on the teeth by Rae. From another source, perhaps, he added notes on the lecture of Edward Jenner. Leaving the next 60 pages blank, Valantine divided the remaining part of the notebook into two main sections, the first (pp. 380-546) for what may be his own notes on published books and, after a further 181 blank pages, the second (pp. 728-98) for extracts from journals.

The notebook appears to have been kept in the family, for slipped between two pages is an undated letter addressed to 'J.W.Valantine' from 'J.W.Williams' (presumably a physician) who promises to visit Mr Butterworth, a patient of Valantine's, the following day when he is in the vicinity seeing another patient at Oxton. On the reverse of this letter are jotted some rough patient accounts (most of the items to be charged for are medicaments but one patient is to be billed for 'midwifery 10s'), accompanied by the date '1846'.

7 He was the son of Joseph Valentine, a painter, and was baptised at St George's Church, Doncaster in April 1782. In the parish records the name is variously spelled Valentine, Vallentine, Vallantine and Valantine. A Joseph Valantine of Scot Lane (in the same parish) appears in the Doncaster Water Rate accounts for 1797.

8 P.J. and R.V.Wallis, *18th century medics*, 2nd ed. (Newcastle upon Tyne: PHIBB, 1988). Towne himself cannot have been very old, since he had only begun his own (presumably 6 year) apprenticeship to Jackson, John & Co in 1788 (*ibid.*).

The recipient of this letter would seem likely to be James William Valantine (1811-1849), a surgeon in general practice in Sutton-in-Ashfield, Nottinghamshire, only ten miles from the Oxton referred to in the letter.[9] The precise connection between the two Valantines has yet to be established (Valantine was a not uncommon name in the north midlands at this period), but it is possible that they were father and son.

All that is known about the subsequent history of James William Valantine's notebook before it appeared for auction at Sotheby's in the 1970s, is that at some (probably early) stage it was rebound and the pages trimmed.

The identity of the original note-taker — or note-takers — from whom Valantine copied is unknown and likely to remain so. The notes on the lectures of Henry Cline could have been made by any of the 48 students who enrolled between September and December of 1783 for the winter session at St Thomas-'s and Guy's.[10] Certainly not among them was Valantine's master Leonard Towne, who apart from practising as a chemist and druggist, was probably only about ten years older than Valantine himself. Nor is the note-taker likely to prove to be any of the four surgeons in Gainsborough around 1800: three were already in practice in 1779[11] and the fourth was not a student at either St Thomas's or Guy's at this time. As regards the lectures of Rae, the pool of possible candidates is even wider, as we shall see.

William Rae and his lectures on the teeth

William Rae began life in Scotland. He is described by a collateral descendant as the elder son of the eminent James Rae (1716-91) who as well as instituting lectures on surgery in Edinburgh, may have delivered a course on the teeth in 1764 when he was Deacon of the Incorporation of Surgeons.[12] James

9 *London and Provincial Medical Directory* (London: John Churchill, 1850). He supplied no details of a qualification to the publishers. The description 'surgeon' is used on his death certificate.

10 Numbers derived from *Index. Pupils & Dressers, 1723-1819: St Thomas's, Pupils 1723-1819, Dressers, 1750-1819; Guy's, Pupils & Dressers November 1768-1819*, Library of St Thomas's Hospital Medical School, 31.d.1.(HI/ST/MS/GI).

11 *Medical Register for the Year 1779* (London: 1779).

12 George Rae Gibson, 'An Edinburgh medical family', *Edinburgh Medical Journal*, 1926, 419-27. Gibson also supplied information to D'Arcy Power, the writer of the entry for James Rae in the *Dictionary of National Biography*, and the statement about his paternity has hence been repeated and perpetuated. A handwritten note has even been added to this effect against the name of William Rae in the printed list of members of the Incorporation of Surgeons of Edinburgh in the Library of the Royal College of Surgeons of Edinburgh.

Rae's other son, John Rae (1744-1808), a prominent surgeon dentist in Edinburgh (as well as becoming the first Fellow of the Royal College of Surgeons of Edinburgh in 1781 and its president in 1804-05), has generally been considered the younger brother. Since he was, in fact, born only a year after his parents' marriage,[13] either the order of birth of John and William was the reverse of that which is commonly assumed, or William was the son of an earlier marriage or liaison. However, that the two were indeed brothers — or half-brothers — is confirmed by an advertisement placed by John Rae in the *Edinburgh Evening Courant* on 1 August 1781[14] declaring that he

> flatters himself, that ... the extensive practice he has had in Edinburgh under his father, and in London under his brother and others, in that part of [surgery] which more immediately relates to the Teeth, their preservation, supplying defect of, &c, will recommend him to the patronage of the Public.

According to Matheson and Payne William Rae moved to London in 1773,[15] but on 18 July 1777 he was to be found in Edinburgh where[16]

> Mr. William Rae having been examined upon his Third and Fourth Lessons was found sufficiently qualified. The Incorporation [of Surgeons of Edinburgh] therefore and in consideration of his having paid to the Treasurer £8.6.8. Str. [sterling] as his upsett do hereby admitt and Receive the said William Rae to be a free Surgeon Appothecary in Edinburgh to enjoy all the liberties and priviledges of the Incorporation.

For fuller details of James Rae, see J.Boyes, 'James Rae 1716-1791', *Proc.Roy.Soc.Med.*, 46(1953), 457-60.

13 'Friday 24 August 1744. To James Rae surgeon in Edinburgh and Isobel Cant his spouse, a son born, John. Witnesses: Ludovick Cant, merchant in Edinburgh, John Rea [*sic*], writer here' (Par. Reg. Edinburgh, B 17431746, p. 108) (I am endebted to Dr H.W.Noble for this extract). The marriage of James Rae and Isobel Cant had taken place at Canongate, Edinburgh on 3 August 1743.

14 Menzies Campbell Collection of Newspaper Advertisements, no. 997, Library of the Royal College of Surgeons of England.

15 Leonard Matheson and J.Lewin Payne, 'The history of dentistry in Great Britain', *J.Am.dent.Ass.*, 15(1928), 441-61, on p. 444. They give no source for their assertion. It has also been said that Rae attended the lectures of the Hunters and that he was John's student, but the source of these statements is currently unclear. Rae was certainly not a student at St George's Hospital at any time between 1768 (the date of Hunter's appointment as surgeon) and 1777 when he himself qualified.

16 Minutes of the Incorporation of Surgeons of Edinburgh, Library of the Royal College of Surgeons of Edinburgh.

Only ten weeks later, on 2 October 1777, he was 'Ex[amine]d for & rece'd [the] Diploma' of the Company of Surgeons of London.[17] Whether he contemplated returning to Edinburgh at this stage (he had been a member of the Medical Society of Edinburgh since 1 April 1775),[18] or whether he was simply ensuring that he would be able to practise there should he decide to do so at some later date — 'no person is allowed to practise Surgery or Pharmacy in Edinburgh till he has been admitted of this College'[19] — is unknown. However, his future career lay in London.

Here he practised as a surgeon dentist in Adam Street, in the Adelphi district, as his impressive trade card[20] and his entry in the 1779 *Medical Register* attest, making occasional professional visits to the provinces.[21] By 1780, he held the appointment of 'Dentist to the Foundling Hospital'.[22]

By 1783 Rae had moved from Adam Street to Hanover Street, and had acquired an additional official position, that of 'Surgeon to the Dispensary for the Infant Poor'.[23] This establishment was set up in 1769 'for the purpose of administering remedies gratis to the children of poor people'.[24] It is described in 1779 as dealing with over 4,000 cases per year and having attached to it only a physician, George Armstrong, MD.[25] In 1783 it had 'lately moved from Soho-square, to the house of Mr. Andrews, Apothecary, in Parliament-street'

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17 Examinations book of the Company of Surgeons, Library of the Royal College of Surgeons of England. One of his three examiners was Percivall Pott (1714-1788).

18 *Medical Register for the year 1783*, 3rd ed. (London: 1783), p. 134.

19 *Ibid.*, p. 131.

20 Banks Collection, British Library.

21 e.g. to Bath in May 1780 (*Bath Chronicle*, 11 May 1780 and *Bath Journal*, 8 May 1780 (Trevor Fawcett, 'Spa dentistry: practitioners in 18th century Bath', *Dent.Hist.*, 30(1986), 28-43, on p. 37).

22 *Medical Register for the year 1780* (London: 1780), p. 49. As well as appearing in the list of members of the Company of Surgeons, Rae features in the new category 'Dentists'.

23 *Medical Register ... 1783*, p. 23. This appointment is listed under his appearance as a member of the Company of Surgeons, his connection with the Foundling Hospital under his listing as a dentist (p. 31).

24 *Ibid.*, p. 34.

25 *Medical Register ... 1779*, p. 43.

and had added to its appointees Andrew Wilson, MD and Mr Rae, Surgeon.[26]

An honorary member of the Physical Society at Guy's by 1784 (the earliest year for which a list of members has survived),[27] William Rae clearly belonged to that small but influential coterie within the medical world of late eighteenth century London. Perhaps because of this, in November 1785 he was appointed dentist to the King in succession to Thomas Berdmore.[28]

A few months later, on 29 April 1786, Rae married Sibbilla Dallas,[29] sister of Sir Robert Dallas, later to become Lord Chief Justice.[30] However, his evident professional and social success was brought to an abrupt end within a few weeks:[31]

> On Wednesday evening last [26 July 1786], about nine o'clock, the following most melancholy accident happened in Oxford-street:- As William Rae, Esq., of Hanover-street, Hanover-square, surgeon and dentist to his Majesty and the Prince

26 *Medical Register ... 1783*, p. 34.

27 *A list of the Officers and members of the Physical Society, held at Guy's Hospital together with a catalogue of the books* (London: 1784), p. 7 (held in the Drowne Collection, Brown University Library, Providence, Rhode Island (R35 G82 1784), copy at the Library of St Thomas's Hospital, London). Unfortunately, honorary members were not obliged to write dissertations, which perhaps deprives us of the opportunity to hear Rae's own words on treatment of the teeth. Nor were they obliged to 'attend the Meetings of the Society oftener than may be agreeable to them: nor to contribute any Thing towards the Library, or in any other Way to Support the Society's Expence'. An ordinary member of the Society at this period was Joseph Hurlock, surgeon, St Paul's Churchyard. This seems rather too late a date for this to be the author whose *A practical treatise upon dentition* was published in 1742, but may have been a family member. He appears in London trade directories from 1763 onwards (unpublished listing of surgeons appearing in 18th century trade directories of London made by D.W.Wright). There were no books relating to the teeth in the catalogues of 1784, 1786 or 1800 apart from those of Hunter.

28 Warrant L.C. 3.67(178) 24 November 1785 (reference quoted by permission from the unpublished research of J.E.McAuley).

29 Register of marriages, parish of St George, Hanover Square, London, and *Times*, 1 May 1786. Rae's likely age at the time suggests that this may not have been his first marriage.

30 Gibson and *DNB*.

31 *Times*, 29 July 1786. No record has yet been found of Rae's burial: it was not at St George's, Hanover Square, St Dunstan's in the East, Mount Street Burial Ground, the Old Burial Ground, Bayswater Road or the Rae family tomb in Edinburgh. His death is not mentioned in either *Musgrave's Obituaries* or the *Gentleman's Magazine*, and there is no record of a will or administration of his estate. A posthumous daughter, Isabella Magdalen, was baptised in her mother's former parish of St Dunstans in the East on 3 March 1787.

> of Wales, was coming on horseback by Park-lane, a kite in a boy's hand startled the animal, who threw him on the stones, and in the same instant kicked him several times on the head. He was carried home a most mangled spectacle, where he expired about one o'clock on Thursday morning. He was a most ingenious man in his profession. And to heighten the calamity, if such a catastrophe can be rendered more lamentable, he had been married within these two months to a most amiable young lady, now a nearly distracted widow.

William Rae has long been considered 'the first person [to give] a distinct course of lectures on the teeth'.[32] The first year in which he did so currently appears to have been 1780, when he advertised on 7 December in the *Morning Chronicle and London Advertiser*:[33]

> Lectures on the Teeth. At the request of some gentlemen who are students of Physick and Surgery and particularly for the sake of those who mean to practise in the country, will be given a short course of practical lectures on the nature of the teeth, and the modes of treatment and operation in the diseases arising from, and connected with them, through all ages, by William Rae, Member of the Surgeons Company of London, and Royal College of Surgeons at Edinburgh. The first lecture will be a public one to be given on Thursday the 14th instant, at seven o'clock in the evening at Mr Rae's house in the Adelphi.

That John Hunter himself was intimately involved with the instigation of these lectures of Rae's emerges from a set of notes taken by a student during the 1782 series:

> Mr John Hunter first proposed the plan of my giving these lectures, from the many accidents which frequently occur for want of sufficient knowledge of the structure of the teeth, &c, and the want of opportunities and improvement which gentlemen must have experienced from this subject not having been so regularly treated as the other branches of anatomy or surgery. In the course of my lectures, I shall refer to the Treatise on the Teeth by Mr J. Hunter, and explain myself by his plates.
>
> In some instances I agree with his opinion, but in others must endeavour to refute him.

32 Statement by Richard Downing (the brother-in-law of Joseph Fox), in his 1815 edition of J.Fuller's *A popular essay on the structure, formation and management of the teeth*.

33 William J. Maloney, *George and John Armstrong of Castleton. Two eighteenth-century medical pioneers* (Edinburgh and London: V.E. & S.Livingstone, 1954), p. 109 (cited by C.Bowdler Henry in his unpublished history of the Royal Dental School and Dental Hospital, p. 40, Library of the British Dental Association). There is no mention of any lectures on the teeth being delivered in London in the *Medical Register* of 1779 (under 'Medical Education', p. 60) nor in the second edition of 1780 (under 'Medical and Philosophical Lectures in London', p. 70).

In 1833 these student notes of 1782[34] were in the possession of J. Glasford Shepherd, MRCS, in dental practice at 53 Baker Street, London. By 1852 they belonged to John Tomes who was instrumental in their being printed in full in the *British Journal of Dental Science* five years later.[35] The original manuscript was finally presented to the Royal Society of Medicine (RSM) by Sir Charles Tomes in 1922.[36]

The writer of the notes is unknown, although one of the owners of the notebook[37] added on page [iv] of the manuscript

> the character of [Fox's] signature [in the obligation book of the Medical Society of London] so closely resembles the handwriting in the following lectures so to excuse if not to fully justify the supposition that Fox attended Rae's Lectures to took [*sic*] notes, and that these notes constitute the following ms lectures.

Although this statement has subsequently been repeated,[38] the owner was quite mistaken in his identification of the note-taker, since the famous Joseph Fox to whom he was referring (the author who delivered his own series of lectures on the teeth from 1799 onwards) was not born until 1775.

The lectures to which Valantine's notebook refers were given the year after those recorded in the RSM text. They were advertised in the 1783 edition of the *Medical Register*, at the end of the list of 'Medical and Philosophical Lectures' (p. 50):

> On the teeth
> Mr W. Rae, at Mr Hunter's Lecture room, in the Haymarket[39]

34 They bear the title 'Lectures on the Teeth/ by Mr Rae/ Surgeon/ The Course began April 12th 1782'.

35 *Brit.J.dent.Sci.*, 1(1856-57), editorial comment, 386. The lectures appear on the following pages: 393-96, 429-30, 457-65, 487-93, 517-21.

36 MSS 239, Library of the Royal Society of Medicine. The notebook measures 16.5cm x 12cm x 2.5cm (6½in x 4¾in x 1in) and contains 146 numbered sheets with writing on one side only. It appears to have been rebound by the RSM. The inclusion on the spine of the date '1872' suggests that it had been in the custody of the Society for some time before 1922.

37 Possibly John Tomes, on the basis of the handwriting.

38 e.g. J.Dobson, 'The Royal Dentists', *Ann.Roy.Coll.Surg.*, 46(1970), 277-91, on p. 288.

39 28 Haymarket were the premises used by John Hunter for his lectures between 1778 and early 1783. The winter session of 1783 was held at his new premises, 13 Castle Street, Leicester Square (G.C.Peachey, *A memoir of William & John Hunter* (Plymouth: [n.p.], 1924), pp. 163-64).

Attendance at these lectures was presumably open to all-comers, not just the students of a particular hospital; any one of them could have made the notes from which Valantine copied.

If Menzies Campbell is correct in saying that Rae delivered a 1785 series beginning at 8 pm on 2 February,[40] then it would appear very likely that Rae, having begun to give his lectures on the teeth at least as early as 1780, continued to do so annually for the rest of his life, first at his own home in Adam Street and then as part of the lectures offered at John Hunter's own establishment. That no one seems to have been remembered as succeeding him would suggest that on Rae's death, whether for lack of interest or want of the right person to step into his shoes, the initiative lapsed until Joseph Fox began his own series in 1799.

Fox's lectures were to prove more influential than Rae's, in part because they were published in book form and so reached a wider audience. However, although he himself was succeeded as lecturer by Thomas Bell, no other medical institution sought to imitate Guy's Hospital in providing a course of lectures on the teeth for a good forty years.

A comparison of the RSM and Valantine notes

The major difference between the two sets of notes lies in their length. Whereas the RSM notes (as calculated from the printed version) are approximately 22,000 words long, the Valantine notes can muster only 5,641, although this is somewhat compensated for by the fact that they include some sketches of instruments. The writer of the RSM notes has been described as taking 'elaborate notes of each lecture as it was given, and afterwards [subjecting] his notes to very careful revision'.[41] From the way the Valantine notes are written, with dashes which seem to indicate deliberately omitted passages, it is clear that he set out not to transcribe the whole of what were already notes, but to make an epitome, and even then only of those parts which interested or were new to him. He (or perhaps the author of the notes from which his own are derived) completely omits, for example, those parts of the RSM text which deal with the glands and details of the nerves and blood supply. No doubt the writer of the RSM notes was equally selective in his own way, for only Valantine includes the information that inflamed eyes in teething infants call for leeches

40 J.M.Campbell, *Dentistry then and now* (Glasgow: the author, 1981), p. 370. No source is given for this apparently very specific statement.

41 *Brit.J.dent.Sci.*, 1(1856-57), 386.

and clysters, that the way to tell shed teeth are deciduous is by their jagged roots and that internally-caused caries is reddish-brown in contrast with the circumscribed spot of externally-caused decay. Valantine is the one who takes down how to use the file so as to avoid discomforting the patient — 'you must hold [the] tooth with a peice of wet Rag' — and that 'Indian Weed is proper to tye the Teeth'. From Valantine we also learn of the recent invention of enamelled artificial teeth and the 'highly improper' methods of extraction used by the French. While both texts contain some remarkably similar (and at times identical) wording, those parts which are unique to Valantine prove that he cannot have been using the RSM text as his source and then incorrectly have ascribed to them the date 1783. If this were not evidence enough that two separate originals are involved, whilst the RSM text states 'The Course began April 12th 1782', the Valantine version prefaces the tenth lecture with the date 'Apl. 2nd 1783'.

There are also minor differences of detail in the two texts. Where the RSM manuscript has 'nitric acid',[42] for instance, Valantine has 'nitrous acid', and where the fuller text speaks of the 'temporal artery',[43] the shorter one gives 'temporal muscle'. Whether these disparities are attributable to the original writers of the lecture notes, to copying errors on Valantine's part or even to Rae himself, cannot be known.

The second major difference between the two texts is that the material is differently organised, particularly in the second half. It is, for example, difficult to equate the content of the two versions from lecture IX of the RSM notes onwards. Rae would appear to have revised his lectures between the 1782 and 1783 sessions.

Interesting though comparisons of contents are in themselves, the two texts bring us no nearer to knowing the detail of what Rae himself really said; they remain only student notes, the selective *aide-mémoires* of two (or three, if we count Valantine himself) individuals for recollections to which we cannot be privy. No published version of William Rae's lectures has yet been discovered. It may be assumed that he was overtaken by events.

Mr Hunter, Mr Rae and the dentists

In his attempt to diminish John Hunter's reputation, Jesse Foot, writing in 1794,[44] sneered at his association and intimacy with 'dentists', some of

42 *Ibid.*, 518.

43 *Ibid.*, 460.

44 Jesse Foot, *The life of John Hunter* (London: 1794).

whom (David Ritchie and Martin van Butchell, for instance) had attended the Hunters' anatomy lectures. He considered Hunter to be acting unprofessionally and, by default at least, giving credibility to the experience and knowledge of such practitioners as James Spence who were not examined surgeons.

Foot appears to reserve the word 'dentist' for non-medically trained practitioners, as does Hunter himself in the preamble to his *Practical treatise on the diseases of the teeth* (1778) where he draws the distinction between what falls within the remit of the surgeon and what within that of the dentist. For both men the term 'dentist' seems to refer to a category of practitioner, rather than being descriptive of a specialist activity. Where they differ is in their attitude towards associating professionally with such men: Hunter was more inclined to judge individuals on their merits, Foot to distance himself from a whole category on principle, despite appreciating the clinical skills of James Spence from personal experience. For him, the fact that two of Spence's sons, George and Thomas Robert, became dentists to the King and that George contributed a paper entitled 'Observations on a disease consequent to transplanting teeth' to the respectable *London Medical Journal* in 1789,[45] presumably counted for nothing in this regard.

However, to jump from Foot's comments to the assumption that all 'dentists' were some lowly species beyond the pale for the medical establishment as a whole, as is sometimes done, is too simplistic. The *Medical Register* of 1780 introduced a listing of dentists, as we have seen, and only two of those included (Berdmore and Rae) were members of the Company of Surgeons.[46] In non-medical directories of the period 'dentists' are listed as just another category of practitioner and appear to have been thought of as such by the general public, although no doubt viewed with as much scepticism as were medical men.

Unquestionably, the levels of training, expertise and education of those practising as 'dentists' were hugely variable — but such was also the case with the majority of medical practitioners in the country at large, still wedded to apprenticeship and the lack of standardisation that this implied. If there was any animus directed against dentists as a group by members of the still relatively young Company, it probably owed much to a fear of encroachment in a crowded London medical world, and of surgery being practised under the cover of dentistry contrary to the Company's monopoly. After all, members

45 *Lond.med.J.*, 10(1789). Cited by Bowdler Henry, p. 37.

46 Also listed are Franklin, James Hemet (dentist to the Queen and the Princess Amelia), Laudumiey, Normansell, Ruspini, the three Spences and Martin Van Butchell. A number of others of repute (such as Parkinson and Talma) might well have been added to the list. In 1783 Brotherson, Jullion, Michaelson and Whitewood were included.

of the Barbers' Company, the old rivals, had continued to extract teeth and often developed specialist dental practices in London. Like Joseph Fox (1733-1795) (the father of Joseph Fox of Guy's), they were frequently described in trade directories as 'surgeon dentist'.[47] Foot's comments, and derogatory remarks about dentists in general, need to be considered within this political context.

However, even Foot would have considered that Hunter had no professional barriers to trample down in characteristically iconoclastic manner by associating with William Rae, a well-connected fellow Scot with two appointments to charitable institutions, member of learned societies and of two companies of surgeons, the son of a former president of one of them and on his way to becoming dentist to the King. Moreover, Rae was no more intent on educating the average 'dentist' than was Hunter. Rather, in his lectures to those destined to become country practitioners, he was concerned to keep treatment of the teeth within the province of the surgeons in a period when treatment of oral disease seemed to be slipping out of their hands: his self-declared aim, as it appears in the Valantine text, is to rescue 'this branch of Surgery ... from Empirics and the hands of a set of ignorant People'. Yet he, too, like Hunter, probably associated with dentists. As we have seen, his brother John spent his time in London gaining experience of dentistry not only with William but with 'others'. Had Berdmore, dentist to the King and the only other dental practitioner to be a member of the Company of Surgeons, been one of his preceptors, it is probable that he would have said so. The 'others' seem likely to have been 'dentists'.

Conceivably, in the eyes of those who shared Foot's attitude towards 'dentists', the sudden deaths, in rapid succession, of Thomas Berdmore and William Rae relegated dental practice in England to a peripheral backwater from which it took a long time to emerge. By the mid-nineteenth century the College of Surgeons not only discounted those dental practitioners who were not examined surgeons but also saw surgeons who practised only dentistry as seceders. Even when simultaneously dismissing treatment of the teeth as beneath them, surgeons would continue to want to keep dentistry under their control for a very long time to come, thereby retarding the development of systematic education for dental practitioners.

47 R.A.Cohen, *Joseph Fox of Guy's (1775-1816), dentist and philanthropist*, 1st Lilian Lindsay Memorial Lecture (Lindsay Society for the History of Dentistry, 1995); D.W.Wright, 'London dentists in the 18th century: a listing from the trades directories in the Guildhall Library', *Dent.Hist.*, 12(1986), 8-16.

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APPENDIX

A transcription of the notes on William Rae's lectures of 1783 from the notebook of James William Valantine (b.1782)

[NOTE ON THE TRANSCRIPTION: the original spelling has been adhered to but minor changes have been made in the punctuation — particularly in the replacement of commas by full stops at the ends of sentences. No attempt has been made to keep the frequent long dashes sometimes (but not always) signifying deliberate omissions. Roman numbers in brackets ([IX]) refer to the corresponding lecture in the RSM text; Arabic numbers in brackets ([269]) refer to the pagination of the Valantine text. No attempt has been made here to analyse the content of this third-hand version of Rae's lectures].

[256]

Remarks on the
Oeconomy & Diseases of the
Teeth,
with the most improved Methods
of
Operating
Collected from a Course of Lectures
delivered by
Mr.Rae
1783

[258] Gentlemen the principle Motive of this Lecture, is by exciting your attention to this branch of Surgery, to rescue it from Empirics and the hands of a set of Ignorant People.

We shall not only consider the Teeth themselves, but also of the parts in contact together with the Diseases wh^{h} may arise from them particularly of the Antrum Maxilla Superioris.

[I] The Teeth are composed of two parts the Enamel, & the bony part, ... the Enamel is very hard, and perfectly smooth, surrounding the boney part.

The Teeth consist of an Earth and an Animal Substance, and are found to [259] last longer after Death, than any other part of the Body. They certainly remain perfect for an immense length of Time.

The very great Density of the Teeth is known by our not being able to trace blood Vessels thro' them. Yet as in a diseased state they become very sensible - we must suppose that Blood Vessels do exist. N.B. in all sensible parts Nerves must have an Existence, and it is highly probable they are always accompanied by Blood Vessels.

In all Carniverous Animals the Enamel surrounds the Tooth, only, but in the Graminiverous we [260] find it entering the Substance, or longitudinal Parralel places - for the purpose of better comminuting and triturating the Food, as in the Horse, Cow, &c.

The Ruminant Class, or those wh[h] chew the Cud, are observed not to have Teeth in the fore part of the upper Jaw. Fish having no occasion to break down hard Substances, have no Enamel. Mr Rae says that the Teeth of Lobsters are found in its Stomach.

By attending to the foregoing Remarks we shall be able to judge at sight whether a Tooth belongs to a Carniverous or Graminiverous Animal.

[261] Birds of Prey which are carnivorous have no Gizzard - but the Graminiverous have, this is a strong Muscular Stomach, that serves the purpose of Teeth in comminuting & grinding their Food.

The Teeth of the Rattle Snake exhibit a beautiful contrivance of Nature for the purpose of Conveying their Poison - these are two in Number, are Tubular, & are but loosely fix'd in their Sokets, situated in the Palate, which is convex backwards, so that its food may easily glide over them. Each has a Bag annexed containing the poisonous Fluid, which upon pressure [is] forc'd thro' a hole into the [262] Tooth and thence injected into the Wound made by it. As these teeth are moveable they are easily displac'd from their Sokets, & the Viper catchers knowing this hold a peice of Red Cloth to the enraged Animal (for the contrivance is the same as in the rattle Snake) which forcibly darting it, is by a sudden Jerk deprived of these poisonous Teeth ... opening the Mouth almost to a straight Line owing to the Articulation being so far back.

The Teeth of the Monkey, in particular the Molares, are exactly constructed like the Human, but they have also long Teeth which are [263] merely for the purpose of fighting.

Some suppose that the Teeth are absolutely necessary to Speech, but I am of a different Opinion.

Climate has a greater Influence that Diet on the preservation or ill condition of the Teeth ... the Dutch have in general bad Teeth, & the Americans, from the same Causes[,] the Dampness of their Climates from Swamps & Marshes.

[II] [264] *On the Action of the Jaws and Teeth in Mastication*

In Carniverous Animals, the Teeth are sharp and not calculated for grinding Food, - therefore the Motion is Simple and perpendicular, but in the Human it is also horizontal or Lateral, and from this Circumstance, the whole number of Teeth do not Act at the same time, but it must be different in the Carniverous, as here the motion is Simple. In these last all the Teeth may be considere'd as Incisores.

A Tooth may be divided into 3 parts - 1st the Body cover'd only by the [265] Enamel - 2nd the Neck which is surrounded by the Gums, & 3rd the Fangs, which are planted in the Alveoli of the Jaw.

The Enamel is a very hard Substance so as to strike with Steel, & it resists in a remarkable degree the Action of Fire. It is composed of Short Fibres standing perpendicularly to the Body in all directions, hence their Ends are opposed to the hard substances which they are to bruise.

The Enamel is incapable of being tinged with Madder as the Bones are. It covers the boney part of the tooth to the Gums, to defend them from the Action of the [266] Air & Saliva, and when it is destroyed, the Tooth generally tho' not always becomes diseased.

The Substance of the Teeth, does not differ from other bones, except in Hardness. Mr J. Hunter thinks the Teeth are extraneous Bodies, as to any internal Circulation.

In Ricketty Constitutions the Teeth have been observed by Mr Rae, to be very dilicate, and frequently diseased.

The Teeth have been remarked to be very White in those troubl'd with Phtysis Pulmonalis, but this is by no means to be depended on.

The Fangs have their proper Periosteum, which is extremely [267] Vascular and composed of two Laminae. It is subject to various Complaints independent of the Tooth itself. The fangs are Conical, hence a quantity of Pressure is thrown over a large Surface in Mastication, than it otherwise wou'd be, thereby preventing the Substance being injured. The Incisores have single Roots or Fangs. The Molares have a greater Number, and these generally spread from each other, keeping the Teeth firmer. Sometimes the Fangs are so spread out, as to include a portion of the Jaw between them.

The weakest of the Teeth are placed furthest from the Centre of Motion, the Strongest of Courses, nearest, [268] only one exception to this Rule is that the most useless the Dentes Sapientiae are nearest the Centre of Motion. These do soonest decay.

[III] *Names of the Teeth*

The two first on each side, i.e. the four which are immediately in front are the Incisores. The next is the Dens Canini, or as Mr John Hunter calls it the Cuspidatus, from its figure. Next to this, are the four Molares and one Dens Sapientiae.

[IV] The Incisores have one smooth cutting Edge, and are flat, having only 1 Fang. The Cuspidatus has also one Fang, & a smooth cutting Edge, but more round. The two first [269] Molares have the appearance of two Roots join'd into one. In the upper jaw, the Molares have 3 roots - the Sapientiae have 3 roots compressed into one. In the Adult, there are generally 32 Teeth, but sometimes the Infant Teeth remaining late in Life - people will then have a Double Row of Teeth. Sometimes the Dentes Sapientiae are wanting in the upper Jaw, & the Incisores Secundi have also been wanting. This is a Lusus Naturae.

The Gums are very Vascular, & when in a healthy State are not very sensible. The Gum adheres to the Alveolary processes and the Collum of the Tooth. The Maxillary Bones at their Margins are very [270] Spongy; the Superior Maxilla is composed of two Plates, which are much wider at the posterior part. It is arched in every possible direction, therefore well adapted to elude any Shock.

The Antrum Maxillare is liable to Inflammation which is very apt to spread & sometimes occasions a loss of y[e] Eyes, and at other times the Matter points outwards thro' the Cheek. An Inflammation of Sneiders Membrane will readily close the small hole of the Antrum. The 2nd & 3rd Molares are nearly opposite this Cavity. It is wanting in Infants & occupied by the Young Teeth that are forming. In some Subjects it is divided into two or 3 Cavities by Septa, therefore when [271] Pus is accumulated in it, it may be necessary to make more than one Opening; its use is to assist the Frontal & Sphenoidal to form the Voice by a kind of reverberation.

The Alveolary processes increase in Strength as the Teeth do. [V] They are form'd entirely for the Teeth, & when any part of it is destroyed, it never unites again like other Bones. The external Plate is much thinner than the Internal. The inferior Jaw is composed of two Plates, between wh[h] the Teeth are enclosed. The Angle of it in the Mouth, is generally a right one. It is articulated to the Temporal Bone, having an Intervening Cartilage for the Sake of [272] Mastication. Carniverous Animals have no intervening Cartilage, as the perpendicular Motion in chewing, does not render it necessary.

Children generally wear a Bandage upon the Chin to prevent Luxation as it may in their tender State, very easily happen. The Fascia of the Temporal Muscle may be wounded and no bad Consequence arises from it. When the Jaws are very widely open'd the Crotaphyle Muscle is very much over the Superior Dens Sapientiae. Therefore to extract this Tooth, the Mouth shou'd be open'd to a slight degree only. The Temporal Muscle may be wounded without any Danger.

[273] The Digastricus elevates the Os Hyoides and depresses the lower Jaw. In Carniverous Animals it only elevates the Os Hyoides and that is the reason they cannot drink & move the Jaws at the same time, as the Dog, Cat, &c. &c.

The upper Jaw is supplied with Nerves from the 2nd Branch of the left Pair and the under

Jaw from the 3rd Branch of the 5th Pair.

[VI] *Formation of the Teeth*

The Alveolary processes appear in a Foetus of three or 4 Months old. At this time however the transverse processes are not yet form'd, but are soon after into [274] eight or ten separate Cavities. The Boney partition first begins to form at the Margin of the Jaw, shooting across from each Side. These contract the Surfaces of the Cells upon which is Spread a thin Membrane thro' which the Young Teeth pass and take a proper Direction. In the upper Jaw the Alveoli are shallow, & in the space of 5 Months are filled with a pulpy Substance, consisting of two distinct parts, one of which constitutes the boney part, the other the Enamel. In Graminiverous Animals these Pulps are insinuated between each other, one for the formation of the Enamel, the other the boney Matter. This Substance lies loose in the Alveolus except just at [275] the bottom where it is tied by a blood Vessel, & it is highly Vascular. The Ossification begins first at the Superior part, from which the boney is form'd & next y^e^ Enamel. After these the Roots are formed and Contract a point.

About the 7th Month after Birth the two first Incisores make their appearance in the lower Jaw, after this the 2 first of the upper Jaw, next the 2 other Incisores of the Under, & then of the upper; the 1st Molares of each Jaw come next, & then the Cuspidati; lastly the 2nd Molares. These 20 Teeth are all that appear during the 1st 7 Years of their Life, & these Infant Teeth have all Roots.

[276] *Symptoms of Teething and Diseases in Children*

In process of Dentition, the Infant becomes hot & feverish, & reaches to every thing it can lay hold of; it is easily awaked from Sleep by starting. The thirst which accompanies it is great, so that the Child will bite the Nipple. The Extremities are Subject to Spasm, the fever increases, and the Stomach from Digestion being soon overloaded with Milk it becomes nauseated, hence Acidities, Flatulencies, & a Diarrhoea takes place, the Stool containing a quantity of undigested curdled Milk. These Symptoms continue until the [277] Teeth appear, when they go off and the Child recovers. The Degree of Danger will be as to the Irritability of the Child's Constitution. [VII] When these Symptoms arise there is generally Delirium preceded by inflamed Eyes, & turgid Veins in the Forehead. Sometimes this is a Comatose Disposition, where the Senses are 1st impaired, and then totally suspended.

Fitts are Dangerous Symptoms arising from great Irritability to the Nervous System.

We must first remove the restlessness & Fever and at this time (the Commencement) the Teeth are deeply Seated in the Gums, we must keep the body open, using relaxing means. In [278] Case of Costiveness Clysters of Warm Water with Oil, and common Salt, are proper. We should avoid all nauseating Doses by the Stomach as it has been productive of great Inconvenience. To relax the System we must either use the Partial or Universal Steam Bath; it has a good Sedative effect in this Case. The Degree of heat shou'd be little above that of the Child's Skin. Convulsions are entirely seated in the Nervous System. Those Infants which are of a Languid Constitution, are often subject to Scrophula, others again are of a full plethoric habit of Body; hence their Complaints are of a more Inflammatory [279] Nature - here we may use evacuants - Opiates - & the Warm Bath and Clysters as beforementioned. The next thing is to use Leeches to the Temples & Ankles. These Remedies will render the Patient less liable to a future Attack.

Small doses of Opium or of Syrup: e Meconio [opium] have been used with advantage. Warm bathing had better not be employ'd 'till after the use of Evacuants. The Child may remain in it for quarter of an hour & then wiped perfectly dry before it goes to rest.

[VII/IX] The Syptomatic Fever of Dentition often makes its attack with great Violence, & as soon dissapears. [280] Cough, Watery Eyes, & the Mumps are Symptoms mostly arising from

Irritability, but Diarrhoea is caused by Acidities in the bowels, from the Milk. The best adapted Medicines here, are absorbents. The Calcin'd Magnesia is perhaps the best.

There is sometimes a discharge of Pus from the Urethra. In all Complaints arising from Dentition we must examine the Child's Mouth & if the Teeth are streching the Gum, we must Scarify to remove all Tension from the Part, but this is very commonly objected to by the Mother.

[281] *Lecture 6th*

The greater Irritability of Infants to those of Adults is a Circumstance to be attended to during the Dentition, as we are in this Case to correct it.

Those Infants who are of a sluggish habit, you will easily be acquainted with, from attending to particular Circumstances. The Opposite Constitutions will require a different treatment. They are predisposed to many Inflammatory Complaints. When we observe the tooth streching the Gum, it must be instantly scarified down to the Tooth, and the wound shou'd be something larger than the Surface of such tooth and it is surprising what relief ensues.

[282] I wou'd not hesitate where the Case was pressing to Cut down even if the Tooth was considerably deep, but if this is not effectually done down to the Tooth, the Operation will again become necessary. This cannot be objected to as all Surgeons know that Cicatrices more readily give way to the application of a Stimulus than an original Part. N.B. It can hardly be prudent to inoculate a Child during Dentition as there will then be a double Irritation from Dentition & the introduced Disease. Inflammations of the Nostrils, Eyes, and all the Neighbouring Glands, will sometimes be the effect of the Teeth, making [283] their way thro' the Gums, which is only to be relieved by Scarification, and if any febrile Symptoms remain, they should be alleviated by other Remedies.

If the Eyes continue to be inflamed the application of Leeches, & Clysters are proper. Opiates are useful when the cough is troublesome.

During the cutting of the Cuspidati the Eyes are most affected, of the Molares of the upper Jaw, the Parotid Glands & Palate are inflamed & sometimes ulcerate. They produce a swelling of the Tonsils & Maxillary Glands & sometimes a discharge [from] the Meatus Auditorius Externus.

[284] In some Instances we find the Young Teeth are diseased before they make their appearance, & when they do they look black & decay'd, and they then generally drop out, and leave ill conditioned Sores behind them.* [Footnote in original: *proceeds from bad Diet, or Scorbutic Habit]. This must endanger the Life of the Child. Here we must use detergent Lotions, & keep the Mouth as clean as possible. It is an erroneous Practice of Nurses who make use of a Thimble, &c to the Gum, which not effectually cutting down to the Tooth, produces great swelling and Inflammation.

When the 2nd Set make their appearance, Local Sympathy takes place only, [285] (the System not being generally affected) hence the Glands - Eye, &c - are only acted upon. When matter lodges between the Young Teeth & Gum, it must be set loose by the Lancet.

In cutting the Gums we must observe one Rule which will hold good in all Operations of the Teeth, which is to place the Mouth to the Window, having the Occiput to your Breast, by which you have the free use of your hands, without hindrance of Light which must happen if you stood before the Patient. The Instrument which Mr Rae uses is a square edged Fleam, preferable to a pointed one, for very obvious [286] Reasons, and it is prudent to prevent it slipping, to place your finger & Thumb on each Side of the Gums.

The Necessity of having a 2nd Set of Teeth becomes very evident by considering the Slight structure of the first.

To extract the Young Teeth it will be necessary to pass a piece of Gold Wire round it, and then twist it with a pair of Pliers making a Fulcrum of your Thumb. If a small root should remain, it may be taken out with a Screw moving the Tooth in different directions; but here it will be necessary to cut the Gum all round.

[287] *Lecture 7th*

The Second Set make their first Appearance in the lower Jaw. In some the 2nd Set is larger than the 1st.

The Pulps of the Incisores are discoverable in a Foetus of 8 Months, & Ossification begins about 5 Months after Birth. At about 9 Months the Cuspidati begin to Ossify.

The 2nd Set of Teeth are form'd in Alveoli distinct from each other, so that they never occupy the Alveoli of their predecessors, which upon the removal of the Teeth are generally absorbed. The 4 Incisores are larger than those in the Infant & likewise the Cuspidati, but the bicuspides, or two 1st Molares, are larger in the 1st [288] Set than the Second.

The Adult Dens Sapientiae & Molares make their appearance, as the Jaw elongates.

The Adult Teeth, or 2nd Set, do not push out the Infant, or 1st Set, mechanically for the Absorption of the Fangs do not always take place till the Corona of the new ones stimulate them. When the 1st Teeth come away you will always find the roots jagged, which distinguishes the Infant from the Adult, a matter of great Importance.

In some cases the Alveoli & Fangs are not reabsorbed, but remain acting as extraneous Bodies producing great Irritation & Pain. [X] After a Tooth is extracted the Alveolus is soon absorbed, & the Space is naturally filled up by the parts giving Way.

[289] *Lecture 8th*

A Tooth of the Second Set coming in a false direction, from whatever Cause, within the outside or inside of the Circle, is term'd its Aberration. This generally arises from a bad conformation of the Parts, & most frequently happens to the Canine, i.e. the Cuspidati. In the upper Jaw it comes often on the inside of the Palate, & prevents speaking. In this Case, it is right to remove it and this is better done by the Forceps than the Key Instrument. This shou'd be different in Form from the common Ones, & is contrived by means of a Screw at the End of the handle to close or seperate the blades of it which shou'd be worked upwards:

[290] When there is any aberration of any of the Incisores, it may be brought into its place by carrying round it a peice of Gold Wire, which is to be pass'd thro' two holes in a thin Gold plate fix'd anteriorly on the others. The Wire then is gradually to be drawn tight and made firm, by twisting it on this plate which acts as a Fulcrum.

The Infant Teeth shou'd be removed instantly when they cause the others to come in a wrong Direction.

[291] *Diseases of the Teeth*

These may be divided (that is their Causes) into such as arise from external or internal. External are hard bodies breaking off the Enamel, application of too much heat, use of Strong Acids. Letting the food remain in the Interstices is undoubtedly a principle one, and being in Contact with a Tooth already diseased. The Internal Causes are local or constitutional Weakness, Childbearing, &c, &c.

If a Caries of a Tooth proceeds from an Internal Cause, it can hardly be put a stop to. It is [292] known by its being of a reddish brown Colour, distinguishing it from one proceeding on external Causes, where the Spot is Circumscribed, and this may be removed by a File, to do which, you must stand before your patient, & to prevent the Vibration of the Tooth, which in some people creates a most uneasy Sensation, you must hold that Tooth with a peice of wet Rag.

[293] *Lecture 9th*

Mr Rae here begins by remarking that if any Tooth decays from an internal Cause, it often happens that the corresponding Tooth is soon after affected, & he adds that a Tooth seldom becomes Carious, after the Subject is 50 Years Old; they will then drop out, but this is owing to y^e^ Alveoli being absorbed.

Absorption of that Socket where a Tooth has been extracted will always take place - the access of Air will promote greatly the decay of the Tooth, and extranious bodies getting into the Cavity will produce [294] Inflammation, & if this attacks the small Vessels, it will suppurate and granulate. If the Inflammation attacks the Periosteum the Pain is excessive.

A Tooth Ach may arise from an Inflammation of the fine Membrane which lines the Alveolus.

The Tooth-Ach is sometimes Periodical, and some practitioners presuming it to be of an Aguish kind, prescribe the Bark - but Mr Rae never knew an Instance where it was serviceable. In Inflammations of the Gums, scarifications and the use of Opium is proper. Pregnant Women are subject to the Tooth Ach, which [295] often induce Hysteria and Abortion. Therefore we wou'd rather try pallitative Methods than Extraction.

Stimuli to the Neighbouring parts as blisters, will oftentimes give relief. The Gums shou'd also be scarified to take off local Inflammation.

If the Tooth is hollow a solid piece of Opium may be put into it with Advantage. Some destroy the Nerve by the Actual Cautery, some by Caustic Applications, & this is best Answered by the Muriatic Acid. When the Nerve is destroyed it will be right to fill the Cavity with some hard substance wh^h^ supports the [296] Tooth, and prevents the Lodgement of Food, previously washing the Mouth out, in order to prevent the Edges of y^e^ Tooth being destroy'd.

The Gum Boil proceeds from a Continued Inflammation of the Alveolary Membrane producing Pus which makes its way thro' a little hole in the Socket either on the inside or outside. It is best here to extract the Tooth, for fear of a Caries of the adjoining bone. If the Patient will not consent to its loss, it may sometimes be cured by a large Incision on the Part.

[297] Sometimes the Matter seperates the Gum from the Tooth which in this Case will soon drop out. To secure it we may use a bit of Gold Wire, and such applications as will prevent Suppuration.

Ulcerations of the Tongue & Cheek do sometimes proceed from Carious Teeth. We shou'd be aware of this, as some practitioners have mistaken 'em for Constitutional, as Cancerous, Venerae &c. In this Case examine the Tooth in its natural State, & you will often discover a Caries of the Tooth opposite. In most Cases you must extract it.

If it proceeds from a Sharp [298] Edge of the Tooth cutting the Tongue, the roughness may be filed off smoothly.

Lecture 10th Apl. 2nd 1783

When you wish to fill up a hollow Tooth, Gold Foil is the most proper when you can get it, but Tin Foil is Substituted for it. The Cavity shou'd be made clean with some Spiritous Substance first and the Tooth shou'd not be filled during a fit of Pain. Having press'd in as much as it will hold, it must then be polished to prevent its getting out.

[299] Abscess in the Cavity of the under Jaw is sometimes Constitutional. It produces an Absorption of the boney Partitions of the under Jaw, which is very dangerous. The matter is generally formed at the root of the Fang. It then erodes the Jaw & afterwards the Cheek. At other times it gets thro' the thin partitions, and at length destroys the basis of the Jaw. The extraction of the Diseased Tooth is the 1st Thing necessary, and then make a depending opening using Antiseptic Applications. When Constitutional we must use internal Medicines. They often occur at the Cricis [crises] of Diseases in warm Climates. The Alveoli never unite when fractured, & never exfoliate.

[300] *Abscess in the Antrum*

This often arises from diseases of the Bicuspides & Molares, in which Pus will often make its way into the Antrum. As here the boney Septum is very thin, the Pain occasions Rigor &c, &c.

And when the Patient's head is inclin'd to the opposite Side, Matter gets into the Nose, from thence to the Stomach, [and] produces Nausea & Vomitting.

This Disease by some has been mistaken for a Polypus.

When the Matter fills the Antrum it often makes an opening under the Orbit. If the Tooth is not extracted at first Suppuration will generally ensue, & this is contained in a Cyst at the root of the Tooth. The [301] Pain will generally affect the whole head.

Sometimes a Fistula Lachrymalis is the consequence of this Disease, & sometimes the Cavity will be filled up with fleshy Excressences. In which Case it is never curable. Here you shou'd proceed no farther in the operation, as it will very probably terminate in Cancer.

To perforate this Cavity you must have little gouches &c. A small one is to be used. The Patient being seated before you, pass the Instrument in the Alveolus & then raise the Handle, & by these means you will perforate the Antrum. If it is fill'd with a fleshy Substance, it will resist the probe, and if there are [302] any boney partitions in the Antrum you must break these down, & then use an injection of equal parts of Decoct. Cortic. [Peruvian Bark] & Aq. Calc. [lime water]. When you inject, grasp the Jaw between the Finger and Thumb, in order to prevent Pain. You must prevent its healing for perhaps a fortnight or 3 weeks, by introducing a piece of soft Wood, untill a generall Disposition for healing takes place. Then let the hole heal up gradually. Never flatter your Patient when you find your Cavity fill'd with Carnous Substance.

Caries of the Jaw from Lues Venerea - Medicines here are much to be depended on, but the Carious Tooth must be remov'd as early as possible, as foetid [303] Pus greatly retards the Cure - best done by a Pair of small Forceps.

Exostosis of the Jaws generally arises from some particular Weakness of the Bones. Here you may use extirpation by means of Plyers or small Chissels. The Actual Cautery must be sometimes used, otherwise you will not destroy that disposition to secrete Bones. (These Exostosis are laminated).

[304] *Lecture 11th*

Tartarous Concretions

This is the Cause of many complaints in particular what we call Scurvy of the Gums. This sometimes completely covers the Neck & Bodies of the Teeth, causing Irritation from which Granulations of the Gums arise putting on the appearance of Cancer. The intention of Cure is the removal of this Tartar, & this may be done either by Acids or Instruments - but Acids at the best are bad for their effects in procuring a Whiteness of the Teeth, arises from a partial Calcination which in time wearing off, a new Surface is produced. The Spt. Sal. Main [hydrochloric acid] will destroy a [305] Tooth in 24 Hours. During the Solution an elastic fluid is evaporated. The Nitrous Acid acts more upon the boney part than the Enamel, the Vitriolic acting in the same manner, but more violently. Of the three, the Nitrous is best, but the use of the Instrument is preferable. During the Scaling of the Teeth, you must hold 'em firm in their Sockets by the finger and Thumb of your left Hand, whilst by placing the thumb of your right against the Gum, it answers as a Fulcrum to the Instrument.

A good Lotion to strengthen the [306] Gums is a Decoction of Bark, with a proportion of Lime

Water & Alum.

The Epulis is an excrescence of the Gums which resembling a Polypus, this may be cut off or destroy'd by Caustic.

Mr Rae dislikes the operation of Transplanting of Teeth, for you may at the same time transplant a disease along with the Tooth, as Venereal, &c, an Instance of which was related of a Miss Morris who lost her life in a miserable manner from this Method. It'can only be done in the Incisores & Cuspidati as they have only one Fang each, and it is in vain to think of performing it on any of the Molares, whose roots do diverge. The best method [307] is to fix the Heads of teeth on the roots of others; here you must file down the old Tooth close to the Gum, with a round file, & having a small Gold Screw fix'd in the body of the new Tooth [it] must be screwed into the old Tooth, but the new Tooth must coincide with the Arch of the Alveolus. This method must not be attempted whilst the old Root has any Sensation.

Artificial Teeth are best made of that of the Sea Horse which may be had of those people who sell Ivory. Indian Weed is proper to tye the Teeth.

A person has lately invented a method of enamelling these [308] Artificial Teeth by joining to them a thin Plate of Gold which has been previously cover'd with a hard vitrified Substance. This answers better than artificial Teeth alone, as it never changes Colour.

[309] [XII] *Lecture 12th*

on

Extraction &c, &c

Difficulties arising from the extraction of Teeth are the diverging of y^e^ Fangs or any ill conformation or contortion, a portion of the Jaw being included between 2 Fangs, Exostosis of the Fangs having knotty lumps at their Ends, Anchylosis with the Alveoli. This last must be the greatest Obstacle, it being impossible to extract the Tooth without breaking off part of the Socket. Now when we meet with very great Resistance in extracting, we must be very cautious how we proceed. If we consider it mechanically, we shall find that all Instruments calculated to extract teeth perpendicularly [310] must be improper. It therefore remains that it must be done laterally, & that more generally outwards, only where the tooth is so far decay'd on the inside as not to allow the Claw to be fix'd.

Tooth Instruments then, do generally act as levers, having Fulchra, or fixed Points, & the nearer this Fulchrum is placed to the Lever, the more ready the Effect, but I do not mean by this to inculcate the Idea that a very great force is necessary, only that we may make a right exertion of that Power. Now those Instruments that act perpendicularly, having no Fulchrum, cannot act to our wishes, unless indeed as the [311] French do, you make one of the neighbouring teeth the fixed point which must be highly improper.

The common Key Instruments are generally deficient, in as much as the Fulchrum is (when it is applied) directly opposite to the Claw, or Power, by wh^h^ the Instrument only acts upon the Tooth which must generally be broken; an Improvement then must be to lengthen this Fulchrum. In using this, both hands must be employ'd, one to the handle, the other to the Claw. This last must always be in the light wh^h^ is certainly an objection. This may be remedied by standing behind the Patient. Now we use an Instrument that requires only one hand (an improvement on the French one). This being straight [312] cannot act upon the farther Molares & Dentes Sapientiae. Yet, however, it may be affected by a crooked Claw adapted to each side of the Mouth. In extracting a Tooth, never do

it rapidly for fear of breaking off the Head, but gradually, 'till the Tooth is loosen'd. Then raise the Fulchrum to act upon it as a pair of Forceps. When the Fangs only remain'd, they were punch'd out by the application of a Sharp Instrument, forcing the root out inwards (a dangerous method). Now in this Case, as we can't have a Fulchrum against the Jaw we have the advantage only of a Simple Lever, using the Finger as the fix'd point. The Gums shou'd be always first freely lanced.

[313] For Children the same kind of Instruments reduced to a proper Scale will Answer.

Accidents arising from improper Extraction are bruising the Gums, to be prevented by guarding the Fulchrum with Linnen Cloth, or Tow, fractures of the Alveolus to be removed by the Forceps. Closing of the Gums (as it is call'd) is necessary, merely to put the Alveoli in their proper Situation being before much streched.

Haemorrhagies sometimes are very troublesome, particularly in [314] Scorbutic Patients. Here you may use a piece of Sponge forcibly introduced and kept within the Cavity.

When Violent Bleeding happens from the Cavity of a decay'd Tooth, it can hardly be stopped but by its Extraction.

Finis
July 2nd 1802

NOTES AND QUERIES

Contributions should be sent to the editor, quoting the precise source, reference and location (where applicable). Quotations should be verbatim. If the communication is a paraphrase of other material, this should be clearly indicated.

027 THE PARSON, THE DENTIST AND THE DEMON DRINK

[March-April 1778]

Doctor Parker [rector of St James's, and chaplain to George III] told me last Year a strange Thing of the same Kind: his curate had informed him he said that one —— a dentist in their parish had sent for him: and when he came, desired to witness an Oath or Vow which he intended to take, setting forth that he would not drink any Intoxicating Liquor for the space of a year to come: The Parson enquired the cause of this odd Resolution; when Ruspini acquainted him, that his Friend had no Power to keep himself sober but by this method; for that he was very much attached to the Sin of Ebriety, which was a great hindrance to his Welfare in this World as in the next, for it incapacitated him to pursue his Business as a Tooth Drawer, by which means he had hitherto got his Living, but wch Business was sliding away from him very fast. the Year before, when he first thought of this expedient; for added he turning to his Wife, you know my Dear I made the same Vow this Time Twelvemonth & kept it strictly; Yes says She, & I know too that yesterday when the Time was expired, You got so beastly drunk that you were forced to be carried to Bed. — The Clergy man very properly however, declined having anything to do with such an Affair; declaring it wholly out of his Sphere, & exhorting —— to gain more Command over his Appetites, & not bring God Almighty in between him and his Bottle any more. —

(*source*: *Thraliana: The Diary of Mrs. Hester Lynch Thrale (Later Mrs. Piozzi) 1776-1809*, ed. by Katharine C. Balderstone, 2 vols (Oxford: Clarendon Press, 1942). Vol. I (1776-1784), pp. 260-61. Quotation).

A.S.Hargreaves — who welcomes suggestions as to the identity of the dentist

028 JAMES PARKINSON, DENTIST and CONCHOLOGIST

[James Parkinson (d. 1804) was Thomas Berdmore's successor at the Raquet Court practice and the founder of a five generation dental dynasty]

Shells formed the nucleus of the great collection known as the 'Leverian Museum'. In 1760, Sir Ashton Lever (1729-1788) purchased several 'hogs-heads' of foreign shells at Dunkirk and it was to these that he later added the many natural and artificial curiosities which delighted, dismayed or disgusted the numerous visitors to Leicester House in London's Leicester Square, the home for many years of the collection called by Sir Ashton his 'Holophusicon'. It was rich in shells and contained many from the South Seas some of which brought reasonable prices when the collection came to the hammer in 1806 after its sojourn with Mr James Parkinson, a dentist, who won the whole Museum in a lottery promoted by Lever in 1788.

(*source*: S.Peter Dance, *Shell collecting; an illustrated history* (London: Faber & Faber, 1966), p. 109. Quotation).

Angela Dain

029 RHEUMS and REMEDIES

[The diarist, Thomas Wilson (1703-84), was rector of St Stephen's, Walbrook, royal chaplain, prebendary of Westminster and son of Thomas Wilson (1663-1755), Bishop of Sodor and Man]

June 1732
Thursday 8, Friday 9
Dined at Corpus Christi Gawdy. A very elegant entertainment. Cost at least £60 [servants 2s.]. Went home exceedingly pained with the Toothe Ache and lay all night and next day tormented to the last degree. Tryed all kinds of medicines but found no relief. Such as Spirit of Turpentine, Sulphur, Harts Horn, Camphine, Laudanum etc. Resolved to send for the famous operator from Whickham.
Saturday 10
Dr Perkins came and with a good deal of reluctance and he assuring me that it would spoil both the teeth it touched upon, I suffered him to draw it out (an ugly kind of pain) being one of the worst kind and a part of the Jaw Bone forced away with it, tho' thank God without much damage and the Tooth Ache quite gone for the present. [Paid him 10s. 6d]. Mem. To be very careful in keeping them clean washing behind the ears and combing the head to divert the Rheum that falls in great Quantities upon my Gumms. In the evening at the Common Room which was very wrong. Catched a bad cold in my mouth.

January 1735-36
Saturday 18
My little Boy had his Gums lanced by Mr Gill the Surgeon, New Bond Street, who did it dextrously.

March 1735-36
Tuesday 2
My boy got a very ill cold.
Wednesday 3
My poor lad much worse. Gave him a purge. Coughed exceedingly. Mr Gill lanced his teeth.

(*Source: The Diaries of Thomas Wilson, D.D., 1731-37 and 1750*, ed. by C.L.S.Linnell (London: SPCK, 1964). Quotations).

David Cubitt

030 THE COURIER PRINCE

Postscript to a letter from Prince Ernest, Duke of Cumberland (1771-1851) to the Prince of Wales [later George IV] (1762-1830), Weymouth, 28 August 1794:

P.S. I have a favor to beg of you; do when you come bring me some of Dumergue's tooth powder.

(*source*: *The Correspondence of George, Prince of Wales 1770-1812*, ed. by A.Aspinall (London: Cassell, 1964), p. 453, letter 858. Quotation].

A.S.Hargreaves

031 ROYAL TEETH IN NEED OF TREATMENT

[The Crown Princess of Prussia (1840-1901) was Victoria, the eldest child of Queen Victoria and Prince Albert. 'Fritz' was her husband, Frederick (1831-1888), later King of Prussia and Emperor Frederick III of Germany. 'Louis' was Louis IV, Grand Duke of Hesse-Darmstadt (1837-1892).

husband of Queen Victoria's daughter Alice. Christian, Prince of Schleswig-Holstein (1831-1917), was about to marry the Queen's daughter Helena (1846-1923). 'Mr Saunders' is Edwin Saunders (1814-1901). For further information on the same subject, see J.E.McAuley, 'Queen Victoria and the dentists', *Dent.Hist.*, 20(1991), 31-38]

[Crown Princess Frederick to her mother, Queen Victoria]

Berlin, Jan 13 1866

Christian is here — I wish someone could persuade him to get Mr Saunders to see to his teeth. I was too shy to say anything to him, but know how much good it did Fritz & Louis. Here one does really not pay enough attention to these little auxiliaries of life ...

[Queen Victoria to her daughter Crown Princess Frederick]

Osborne, Jan 17 1866

... I shall see to Christian's ... teeth.

Osborne, 24 Jan 1866

Saunders has seen him & will do what he can.

(*source*: *Your dear letter: private correspondence of Queen Victoria and the Crown Princess, 1865-71*, ed. by Roger Fulford (London: Evans, 1971), p. 56. Quotation).

Christine Hillam

032 BOSWELL THE SATISFIED PATIENT

Boswell's journal in London, 1773:

Wednesday 5 May

Tooth, ill at break[fast]. Mr Dilly gave tincture; did me good ...

Thursday 6 May

... Toothach easier. Went to Spence: two stumps drawn and teeth cleaned; agreeable to see things well done. Dined Lord Fife's: ...

(*source*: *Private Papers of James Boswell from Malahide Castle, In the Collection of Lt.Col.Ralph Heyward Isham*, ed. by Geoffrey Scott and Frederick A. Pottle, 18 vols, privately printed (1928-34). Vol. VI: *The Making of the Life of Johnson*, ed. by Geoffrey Scott (1929). Quotation).

A.S.Hargreaves

033 WILLIAM BRADSHAW, DENTIST and POLYPRACTITIONER

William Bradshaw, my great-grandfather, was born in 1784 in Lancashire and seems to have practised in Kingston upon Hull. He may have been apprenticed at Hull General (now Royal) Infirmary but no evidence has yet emerged of his holding any kind of qualification. He is described variously as a physician, medical practitioner and surgeon, but on his wife's death certificate (1874) appears as 'Wm Bradshaw a dentist'.

Bradshaw appears to have been in the United States at the end of the eighteenth century, and was definitely so in the 1840s. A letter survives from this period (dated 1848) addressed to him at Oswego Post Office, New York State, from his son, Dr W. Bradshaw, who was just about to embark on a short business trip to London. As well as instructing his father how to claim land holdings in Monroe County, Pennsylvania, in the event of his non-return ('they are great rogues in Pennsylvania and you may have to boldly assert your rights, don't be humbugged'), he rather mysteriously instructs him to 'settle yourself down quietly and by no means allow yourself to be known here. You may leisurely go on making the lozenges and not over 4 [grs?] each in weight. Dry them and pack them in bottles you will have'.

This son was also a medical practitioner and was expecting any day to be appointed physician to a life insurance company at a retainer of $ 1,000-1,500.

(*source:* family documents).

John R. Bradshaw

034 CHLOROFORM IN DENTISTRY SUPERSEDED?

[Joseph Snape (1811-85) was in practice in Chester from 1840. Three of his sons (presumably including the one mentioned below) became dentists. The use of electricity as an anaesthetic agent was the subject of a meeting of the College of Dentists reported in the *Lancet* (vol. 1, 1859, 594)].

To the Editor of the *Times*

Sir,

Having seen in the papers an account of a death from chloroform administered by Mr Keeling, of Epsom, formerly a pupil of mine, I should wish through the medium of your columns, to call the attention of dentists to the discovery that the application of the electrical current will produce local anaesthesia. Some few days since I was informed of this discovery, and immediately put it into operation, with results which have amply realized my anticipations.

In the course of the week I have extracted upwards of 150 teeth from persons of all ranks of both sexes and of every age, and the testimony of each has been most satisfactory. Some persons said they experienced pain, but not so much as usual; others, that they felt no pain whatsoever. Some patients have said they were conscious of the pull, but the customary pang was absent. The exclamations of many after completion of the operation have been, 'Oh, how very delightful!' 'How very nice!' 'How very wonderful!' &c. One gentleman, who was rather sceptical, after having a tooth extracted, said, 'Well I would not disbelieve a man now if he told me he had learned to fly.' Feeling desirous of getting as satisfactory evidence as possible, I persuaded my youngest son, who is not fonder of having his teeth drawn than other boys of his age, to have a temporary molar tooth removed, in order that he might be able to tell me what he thought of it; as soon as the tooth was out he exclaimed, 'That's the thing! It will do, papa!'

I have found children of the most nervous temperament, whom we have had great difficulty in persuading to undergo the operation, afterwards declare, although they cried out, they felt no pain. Other children, when asked if they felt anything, answered, 'Only my arm tickled a bit.' From these results, I think we may venture to say we have obtained an agent that, in dentistry at least will supersede the use of chloroform. In the electric current we have an agent without danger or any disagreeable accompaniment, most easily applied.

I am, Sir, your obedient servant,
JOSEPH SNAPE
Dentist to the Chester Infirmary

Bridge-street, Chester, Sept 2.

(*source*: *Times*, 4 September 1858. Quotation).

ELECTRICITY IN TOOTH EXTRACTION — A correspondent of a contemporary says:- 'The application of electricity for producing anaesthesia in toothdrawing is a recent discovery of Brother Jonathan's, and appears to be creating a considerable sensation on the other side of the Atlantic. Should it prove all that is said of it, it will indeed be a boon, and from my own experience I must confess it promises well. The letter from your Chester correspondent [presumably Snape] will probably induce a desire in many of your readers to try the experiment, but the *modus operandi* being omitted, it may not be readily understood in what manner the current is to be applied. The apparatus for the purpose is extremely simple, and consists principally of the common electro-magnetic machine used in medical electricity, a single cell, and a pair of plates

constituting a Smee's battery, and a small electro-magnetic coil with a bundle of wires for graduating the strength of the current. One end of the thin wire conveying the secondary current is attached to the handle of the forceps, and the other end of it to a metallic handle to be placed in the hands of the patient. The instrument touching the tooth completes the circuit, and the current passes instantaneously. The wire attached to the forceps should be made to pass through an interrupting footboard, so that the continuity of the wire may be broken in an instant by a movement of the right foot of the operator. The advantage of this arrangement is that it allows the instrument to be placed in the mouth without risk of producing a shock in coming in contact with the lips, cheeks or the tongue, which would interfere with the quiet of the patient. A hole drilled in the end of the left handle of the forceps and the end of the wire tapered to fit rather tightly allows the substitution of one pair of forceps for another with scarcely a moment's delay. The importance of this subject is so great that numbers will doubtless immediately have recourse to it, so that we may soon expect its real merits to be fully ascertained.'

(*source*: *Weekly Dispatch*, 19 September 1858. BDA Archive 399. Quotation).

Christine Hillam

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035 TEETHING AIDS

Between 1769 and 1771 John Macdonald (b. 1741) was accompanying his master, Colonel Dow, on a voyage to India. They spent some time on the island of Joanna.

I walked along the shore, and went out with the last boat, about half a mile by sea to the ship. At the bottom of the sea, round Joanna, the coral grows up like short spikes, that help the children in England to cut their teeth.

(*source:* John Macdonald, *Memoirs of an eighteenth-century footman* (London: Century Publishing, 1985), p. 104. First published in 1790. Quotation).

Christine Hillam

DENTAL HISTORY AT THE 1997 KOREAN MEETING

Stanley Gelbier *

In September 1997 the 75th FDI World Dental Congress took place jointly with the 42nd meeting of the Korean Dental Association. From the perspective of dental historians this was one of the best meetings ever. It proved conclusively the need for people to travel and meet in each other's countries; certainly, I had no idea how much historical activity there was in Korea before my visit. There were historical topics within the main programme, quite apart from the meeting of the FDI's History of Dentistry Section. Therefore, people attending the conference had many opportunities to learn something about dental history.

The first paper of interest was given by Dr Chang-Duk Kee, President of the Korean Society for the History of Medicine. In 'Dentistry of Korea: past and present' (summarised in the FDI programme), he described how oral diseases were treated within the unique medical system of Korea, Han-Eoi-Hak, which was influenced by Chinese medicine. Soon after the Cho-Sun regime opened the door to the West in 1876, western medicine and dentistry were introduced but Japanese colonial occupation undermined the development of Korean Medicine and Dentistry until the end of World War II. The Korean War promoted the direct influence of American medicine and dentistry with the support of the United Nations. There are now 11 dental colleges and 15,000 dentists care for the oral health of 40 million Koreans.

The FDI's History of Dentistry Section met the next day, on 7 September. The session was attended by a number of Koreans as well as other international members, several of whom translated for their colleagues, particularly during the discussion periods. The first paper was given by Dr Marguerite Zimmer (France), Secretary and Chairman-Elect of the Section. Entitled 'Forgotten pioneers of the history of Prosthetics', it discussed the manufacture and attachment of artificial teeth between 1791 and 1836, and included information on improvements developed by Christophe François Delabarre, Alexandre Nasmyth, Antoine Désirabode Malagou, Jean Henri Weber, J.C.F. Maury, and Louis Alexandre Picard.

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Professor Stanley Gelbier (UK) lectured on the 'Origins of some early dental services in the UK', showing how school dental services in London developed against the general socio-economic background existing the United Kingdom at the turn of the century. He demonstrated how it is essential to have enthusiasts to take forward ideas locally, whilst ensuring changes in legislation nationally that allow local changes to occur. There was emphasis on the work of Margaret McMillan, Charles Edward Wallace and Frederick Breese.

Finally, in 'R. Ahmed: father of modern dentistry in India', Professor T. Samraj (India) described how Dr Ahmed graduated from the United States of America, how he started the first Dental College in India, the contents of the curriculum used in his College, how he donated the College to the Government, and his contribution in formulating the Indian Dentists Act. All this had taken place in the past 50 to 75 years.

At the AGM of the Section, Professor Josep Ustrell (Spain), formerly co-opted, was elected a full member of the committee. Dr Zimmer reported on arrangements for the 1998 meeting scheduled to take place in Barcelona, Spain and also on preparations for the Centenary Meeting in Paris in the year 2000. She is working with Dr Claude Rousseau and other colleagues to mount on behalf of the FDI a History of Dentistry exhibition as part of that major conference. It is hoped to outline developments within the FDI itself during the period as well as showing how the practice of dentistry has changed over the past 100 years.

An entire session on dental history was chaired by Dr Yung-Kyun Kim, past President of the Korean Academy of the History of Dentistry (KAHD). The following three papers were given during this session: Dr Jong-Chan Lee on 'Health care reform in dentistry among OECD countries: a comparative historical perspective' (in deference to my presence, the speaker gave his lecture in English rather than in Korean, a gesture much appreciated and admired); Dr Kyung-Bin Imm (current President of KAHD) on 'The origin of western dentistry', and Dr Ben Swanson on America's National Museum of Dentistry in Baltimore, Maryland. Using modern technology, he explored antiquarian and comparative historical views of dentistry, inviting his audience to consider the current development of dentistry from different historical perspectives. The presentation suggested ways in which dental leaders of the 21st century might support international networks for the history of dentistry.

Our Korean colleagues certainly showed us how to put dental history onto the map. It is a challenge for all of us in other countries.

BOOK REVIEW

A.S.Hargreaves *

A History of the Royal Dental Hospital of London and School of Dental Surgery 1858-1985, by Ernest G. Smith & Beryl D. Cottell. London & Atlantic Highlands, NJ: The Athlone Press, 1997. ISBN 0 485 11517 4. Hardback, xi, 178, illus.

A history of the Royal was commenced some thirty-five years ago by the late C. Bowdler Henry, with the intention of publishing it for the centenary celebrations, but despite his amassing material up to 1948, the task was never completed. After the merger of the School with that at Guy's Hospital in 1985, it was felt that the record should not perish, so the Minute Books and Annual Reports have been trawled and amplified by articles in contemporary journals and newspapers, together with Bowdler Henry's papers and unpublished material (now in the BDA Library) to produce a lively, readable account of the foundation, growth and eventual demise of the first European institution to provide both scientific education and professional training for dentists, founded during the struggle to formalise the profession, when the Memorialists and Independents contended the most appropriate way forward. This book examines the funding, buildings, personalities and activities of its life, the swing away from the Royal College of Surgeons towards the University, its ambitions, financial contrivances and frustrations, until the Leicester Square premises were finally transmogrified into the Hampshire Hotel.

Refreshing for what is essentially a commemorative history, the authors have not lost sight of the broader social and economic contexts of the periods they are discussing, and have appreciated changing cultural attitudes; what might jar today in terms of political correctness was the norm in earlier decades. Their personal experience in administration and a wryly detached eye have breathed life into the dry reticence of the Minute Books. Who can resist this termination of financial fraud in 1861?:

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> Almost simultaneously Mr Large, the Collector, seems to have been invited to attend a meeting of the Management Committee in the course of which he found it appropriate to offer his resignation. The formal prose of the minute-writer fails to reveal the alacrity with which the Committee accepted this offer.

Despite the rather acid colour of the dust-jacket, the book itself is nice to handle, the type-face easily readable, and the illustrations clear, but the reader's enjoyment is undermined by an unacceptably large number of typographical errors: a whole line lost from the Introduction (though there is an erratum slip), 'responsibility', 'daugther', 'asked to to help', and even 'Printed and bound in Great Britain by Cambridge Univesity (*sic*) Press', are but a few examples. Nevertheless, and even for those who have not spent time under the Royal's aegis, this is a history that well justifies its space on the bookshelf.