

**GUY'S HOSPITAL DENTAL COURSE (1944-1950)
SOME THOUGHTS FROM AN EX-STUDENT**

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Introduction

The declaration of the Second World War in 1939 had a major influence on my choice of career. By 1943, the year I sat my School Certificate examinations, my contemporaries and I were faced with being called up into one of the armed services. Several wanted to be fighter pilots and I wondered at their fearlessness. I dreaded the prospect of being a soldier, quite apart from the disagreeable imagining of being wounded or killed by the Germans, I was horrified by the thought of having to fire at and kill my fellow humans. My mother had unfolded the grim horror of the First World, when she was a nurse in a casualty station just behind the front line. She gave vivid descriptions of the terrible injuries inflicted and sufferings of young soldiers hit by shrapnel or bullets from rifles or machine guns. Even when not fighting they suffered appalling day-to-day conditions. She had unwittingly inculcated within me a dread of military combat. What was I to do? Among my earliest memories were my mother saying that one day my brother and I would become doctors or dentists. Later my father, a dentist in the army, said that only professional people survived in a severe economic crisis. My brother always wanted to be a doctor, but I didn't. At that time there was no question of doing an ordinary university degree. Entry into all degree courses, except for medicine and dentistry, was delayed until after the war. My parents had always assumed I would become a doctor or a dentist. By 1944, my father was a senior administrative officer in the Royal Army Dental Corps so I thought I would get a dental degree and quickly escape the repetitive details of clinical practice. I'd become an organisation man like my dad!

I used a subterfuge to disguise my abhorrence and fear of the dangers of war. I did think of being a Conscientious Objector, but I couldn't in all honesty do that. I understood from the earliest months of the war that Hitler and the Gestapo were an evil against civilisation. And I knew about anti-Semitism from the Jewish refugees to whom my mother offered hospitality at Sunday lunches. The war against Hitler was a war that had to be fought.

I applied to and was interviewed at Guy's Hospital Dental School by the very old looking Bocquet Bull, the dean. He only asked me what sports I played and why I applied to Guy's. When I said my mother had trained as a nurse at Guy's in 1910 there were no other questions.

The preclinical course

I joined the dental course for its first year of basic science. Though I had already done a year in biology, physics and chemistry at my boarding school, I found the unfamiliar teaching style at Guy's with packed lecture theatres difficult to follow, and was totally unable to work on my own. The teachers of these subjects were successful academics with their own original published work. Grey haired Professor Stead who taught physics lectured in a dark city suit. He had worked with or knew Rutherford whose pioneer work in nuclear physics contributed the design of the atomic bomb. Intriguingly, months before the dropping of the first atomic bomb on Hiroshima, Stead remarked as an aside one day that the prospect of splitting the atom and developing an atomic bomb were a real possibility.

Mr Baxter taught biology in an accessible way. Mr Ewing taught us chemistry and memorably pronounced mother liquor as 'mudder licker'. A year later, when I was living in Fulham, I often travelled on the same District underground train as he did, but we never spoke. Tragically he threw himself under an approaching train, and the first anyone at Guy's knew of his death was when his unidentified body was recognised in the Guy's Hospital mortuary. With such undoubtedly talented teachers, I cannot understand why or how I frittered away the time, but ended my first year hopelessly failing my 1st BDS examinations. I was lucky not to be thrown out and was transferred to the LDS course regulated by the Royal College of Surgeons of England.

I was overwhelmed by my failures, believing that I must be a very stupid person. It took me some time to recover my confidence. I passed the College's physics and elementary biology exams in December 1945 and chemistry in June 1946. The last was delayed because it included organic chemistry, for which I had to attend special classes. I quickly absorbed the new subject, taught by Dr Brain. He greatly restored my confidence when he gave me a high mark in the term test, laughingly saying he must have been asleep when he marked my paper.

Accommodation

My first digs in London were in a Victorian house in Blackheath with five medical students and a Polish engineer, Tchaikovsky, who became a very good friend. Among the medical students, Owen was a Welshman, an enthusiastic fly fisherman who relaxed at the weekends by making his own flies. Pearce was from King's School, Canterbury, a very assured character with a blustering manner, who worked very hard. There was a very clever boyish looking student who had been at Bedford Public School. There were two much older students whose particular lifestyle implied a sophistication at which I could only guess. They were unbelievably confident as if they knew how lucky the medical profession was to have them as recruits. A motherly Mrs Prior supervised the establishment. Blackheath was on the path of

doodlebugs, V1 bombs, on their way to Central London. Occasionally they landed and exploded nearby, causing extensive and widespread damage. I often heard their noisy motorbike-sounding engines. If you could hear them overhead, you were safe; but their engines cut out before reaching, you were at risk. V2 rockets followed later. Also omnipresent were our defences, the rapid firing rockets anti aircraft guns located on the Heath, whose shrapnel fell with a clatter on the neighbouring roofs and streets.

I used to swim with Tchaikovsky at Greenwich baths. A friendly pool attendant, hearing I was studying anatomy, said he could get me a skeleton for free from a local cemetery that had been bombed! I didn't take up the offer. Tchaikovsky was an enthusiastic walker with whom I went into the country at weekends. One day we quite unsafely took a shortcut through a railway tunnel. We worked out that if a train was heard we should lie down until it had passed. In subsequent years I have often noted the recesses built in to tunnel walls for the safety of workers. Tchaikovsky had escaped from Poland before the Germans invaded. He came from a prosperous family. He was the first person to alert me to the fact that if I thought the Nazis were cruel torturers, the Russians were far worse.

Ian Thomas, a bright student from Ynysybwl, a mining village in Wales was my closest companion in the first year. He had in contrast to myself an adequate allowance, and knew his way around London's West End. We went to an occasional theatre, but more often had lunch at the Leicester Square Lyons Corner House. In the Salad Bowl restaurant we could eat as much as we wanted for half a crown.¹ The student restaurant was poor so we frequently had a meal at one of the many nearby pubs. The most agreeable one was the old staging inn, the George, which was old enough to be the setting for Chaucer's Canterbury Tales. It is now a National Trust property. We routinely had a few hard crust rolls with a thick slice of cheddar cheese and a half pint of delicious bitter. Afterwards we wandered back to our very run down students' common room where my most vivid memory was watching senior dental and medical students playing poker for one-pound stakes. They looked serious. Because sport had been such a large component of my life at school, and as ability at sports was thought to be one of the reasons students were selected, I joined the Guy's B rucker team. They played against adult teams and I, at 17-years-old, was not robust enough.

Early clinical studies

I repeated the failed examinations and attended a course in anatomy and physiology, passing the exam in September 1946. The anatomy lecturer, who illustrated his lectures on the blackboard with coloured chalks, was excellent and easy to follow. Paradoxically, though the war was still on when I started anatomy,, there was a shortage of bodies to dissect, so I learned all my

¹ £3.62 in today's money.

anatomy from prepared dissections. Frankly, I was relieved not to have to bend over the naked formaldehyde-preserved corpses, to locate their organs, reveal the muscles and follow the paths of nerves and blood vessels. At the same time, I followed a course on the properties of dental materials and passed the exam in September 1946. The speed with which we took these different subjects suggests our knowledge must have been very superficial. I'm convinced most of my examination successes were dependent on either first class teachers or well written textbooks, the latter always making up for any incompetence of the former. There were excellent anatomy texts, and a newly published text on dental materials was a revelation.

I began my clinical studies in 1946 in the Prosthetics Department. My first patient, for whom I had to construct full upper and lower dentures was a very thin little old lady dressed entirely in black with a hat, and with boots that laced up to just below her knees. She lived in Bermondsey, and was supposedly benefiting from the free treatment she was entitled to² for acting as a guinea pig for students. Reasonable results were assured by very competent clinical teachers who checked every stage of the construction and fitting of the dentures, both in and out of the patient's mouth. The first thing I had to do was to take an impression of her toothless mouth with plaster of Paris. The mixed plaster was loaded onto a tray that approximately fitted the patient's mouth and shoved into her mouth. As the soft plaster ran out of the back of the tray the poor patient would wretch helplessly and one hung onto the tray for dear life until the plaster had set. In a few minutes it set rock hard. One then had the challenge of freeing the solid plaster from the toothless gums. My old lady was very understanding.

From this impression I made models of the gums on which I constructed bite blocks to establish how the old lady's jaws related to each other. Then I mocked-up a set of porcelain teeth secured by a thick layer of wax onto a hard shellac base, which was closely adapted to the contours of the patient's mouth. It took me a long time to construct this wax model denture. With some trepidation I recalled the patient. She arrived dressed in the same identical black clothes and seemed none the worse from our previous encounter. I tried the wax model with porcelain teeth in the lady's mouth. As she was uncomplaining I went in search of a demonstrator to check the work and obtain his signature of approval. The only demonstrator that afternoon had a tail of students waiting for him to give approval for their work, and so I patiently took my turn totally oblivious of the disaster that awaited me. When it was my turn and the demonstrator followed me to my little old lady, I saw with horror that she was sitting forward in the dental chair spitting the porcelain teeth out on the floor, as one by one they became loose in the wax that was softening in her mouth. In ten minutes she effectively undid two weeks work. If ever there was confirmation that dentistry was not meant for me, this was it.

² We have to remember this was before the National Health Service, which did not start until July 1948.

Eventually, with the help of the technicians, I finished and fitted the denture for the old lady. Just when one felt the job was completed she would come back because the dentures were causing ulcers. I often suspect that when she no longer came back, she had consigned the dentures permanently to a glass of water by her bedside.

Along with this introduction to patients, as part of the technology needed for constructing dentures, we were introduced to the mysteries of numerous dental materials. We began by pouring plaster, discovering the right balance of plaster and water. Fortunately the newly developed elastic alginate materials were introduced at this time for taking impressions of patients' mouths. We made plaster models of dentitions by pouring plaster into moulds and learned the secrets of avoiding air holes. We manipulated wax and shellac,. We melted and poured metal. We arranged artificial teeth into mock up dentures until they were finally made into dentures, using the latest acrylic materials. Previous to acrylic, dentures were made in vulcanite. The old vulcanising ovens were still being used for repairing the old dentures.

The technicians who taught us to manipulate these materials were among the most competent teachers we had. They were not only superb craftsmen in their own right, but they were the most kindly and sympathetic teachers. I did not have a natural ability with making things with my hands and I was slow to learn, and I am sure that without the support and encouragement of the technicians, men like Mr King and Mr Baker, I would most certainly have left dentistry then.

Among the clinical teachers was Professor **H R Fenn**, head of the Prosthetics Department. What he did with his time I had no idea but assume, as he was a professor, he engaged in research. He gave a few obscure lectures, but remained remote from the students. Among the clinical staff was Mr James Mansie, a part time demonstrator who practised in the Harley Street area. He was a marvellously flamboyant character, and when he was on the clinic was known to toss a denture made by a student that wasn't up to standard out of the window. I particularly appreciated Mansie because he had read widely, including Joyce's Ulysses, and I was smugly pleased when he wrote on a test paper of mine that I had written in good English, but what I had written had little relevance to the subject matter. Mr Kenneth Liddlelow was a humane and understanding teacher who revolutionised the quality of the work done by the dental students. He subsequently became professor of prosthetics and dean of the Dental School at King's College Hospital.³ Mr **xxx** Wheatley, the other prosthetic clinical demonstrator, had a practice in Beckenham. He was a very competent and practical clinician. By chance he had been in the Royal Army Dental Corps during the war and served in India under my father. He told me he remembered one evening in Delhi sharing half a bottle of whisky with my father. Though Wheatley claimed he drank only

³ He was co-author of H R B Fenn, K P Liddlelow and A P Gimson, Clinical dental prosthetics, Bristol: Wright, 1961.

a modest amount he woke with a terrible hangover. When he went into the office in the morning my father, sharp as ever, asked why he had kept him up drinking so late? Wheatley was amused by the experience. He subsequently treated me in his own practice. I was always the last patient of the day. After the treatment was completed I sat and drank glasses of sherry with him.

The difference between the technical and clinical teachers was partly attributable to subtle English class distinctions. Dentists in 1945 were still sensitive about these distinctions because of the Dentist Act 1921. Until then anybody could set himself up as a dentist. From 1931 those with qualifications were called “dental surgeons” and those without, “dentists”. During the war the distinction between dental surgeons and technicians was very clear. Clinicians called up into the armed forces were immediately given an officer’s commission whereas the technicians were conscripted into the Other Ranks: the highest ranks they could achieve were sergeant major and rarely warrant officer.

Dental surgeons had to undergo a five-year training⁴ and had to pass examinations of a university or a Royal College of Surgeons. Technicians learned by apprenticeship and the City and Guilds examined their skills. They were not allowed to work directly on patients. Technicians were “instructed” to make dentures to specific specifications by clinicians, who then adjusted the finished dentures to fit the patient’s mouth. The clinicians employed technicians to do the practical work. There was a very big gap in the wages the latter received and the fees the dentists earned. I, of course, learned all about the making of dentures from my apprenticeship under the technicians and have always remained grateful for what I learned from them. In the end I was able to use all the materials with reasonable skill, and I was very proud when Mr Baker congratulated me on a gold denture that I had made under his guidance, which he rated as a fine piece of jewellery.

Materials and equipment innovations

I started dentistry coincident with several innovations in new materials, which greatly increased the ease of the work. Very accurate impressions of the mouth could be taken with the new alginates. Acrylic was introduced to make denture bases and artificial teeth and quickly replaced the old vulcanite and porcelain teeth dentures. A new kind of articulator that imitated the movements of the jaws was introduced to replace the simple open and shut articulator with which I learned. Local anaesthetic was supplied in convenient cartridges, assuring sterility and a known measured amount. Foot pedal drills were superseded by electric engines. Only after I qualified did turbine-driven drills come in. The dental unit concept with water, air, and incorporated suction in an easy to reach and move holder was introduced. There was superior lighting and an electric engine which drove an easily adjustable drive

⁴ 4 years if they had previously passed chemistry, physics and biology.

arm for the drill. The dental chairs were designed for easy adjustment by simple controls.

Accommodation change

At Blackheath I was cut off from my friends who lived on the west side of London, so I moved to be near them in Fulham. As a result had limited contact with my fellow students and only socialised with them at lunchtimes. One senior student laughingly berated me for always having a non-dental book in my hand, and suggested that there would be plenty of time to read for leisure when I retired. He even thought I should be reading English. I smiled quietly to myself. It is difficult to imagine what kind of persona I projected. On another occasion I was asked from where I had got my posh accent. I was mortified as it was the last thing that I thought I had.

After two years as a dental student, it was increasingly obvious to me that I shouldn't be studying dentistry and now the war was over, my original concern to avoid combat was no longer an issue. The theoretical dental course was superficial and the idea that dental students didn't need to know anything in depth, as true as in some subjects it might have been, really bugged me. The superficial academic content and the multiple practical tasks I learned, was an education for a Jack-of-all-trades and a master of none. Some clinical teachers, although excellent at supervising our clinical work, were often appalling lecturers. There was one dental consultant who gave us lectures on dental anatomy. Even then I recognised he didn't understand the subject he was supposed to be teaching. I constantly talked about giving up dentistry, but my elder brother influenced me to stick with it. My father was paying for my education as there were no student grants in those days, and my brother said, as I had already spent two years or more as a dental student, why not finish so I could be sure of earning some money. "Then you can do what you like." He was right, but not quite in the way either of us imagined. It was also a time when there was an acute shortage of money at home and I knew what deprivation was all about.

I and a few other students were among the last to obtain a place at Guy's straight from school, as places became reserved for ex-servicemen, a number of whom I got to know well and whose friendship I greatly valued. They were very serious students and eager to catch up on lost time. Many of them were married and had children. One ex-major still wore his great coat in winter and arrived at the hospital in a green Bentley. Some of the ex-servicemen had had fearful experiences, but only occasionally did they ever mention them to us. It was as if they wanted to put that all behind them and forget. For some reason or other, they always felt we younger students learned more easily than they did, but I'm not sure we did. With their family commitments they probably had less time than we did; and we with more time did not use it effectively. Their presence on the course greatly influenced the way we were all treated by the staff of whatever rank.

Among my contemporaries I particularly remember those who had superior skills. They instinctively knew how to handle materials and achieved very high standards of workmanship, and did so very quickly. Russell Venning, an ex-serviceman, was impressively competent in achieving these high standards.

As a group we got on well together, with a very generous give and take atmosphere. In all my time as a student at Guy's there was only one occasion when the spirit of generosity failed. There were one or two Jewish students. One of them, Leonard (Lenny) Rees, somehow flaunted the privileges preserved for senior students. They were quick to take their revenge and cornered him in the locker room, and after debagging him, encased part of him in plaster. I happened to be in the locker room at the time and wondered if their revenge was more motivated by anti-Semitism. Lenny was a clever person, who amazed me by his freedom from the restraints of conventions, even taking himself off on his own to a nudist camp. I couldn't imagine myself doing such a thing. Rees subsequently became a lecturer in dental anatomy with James Henderson Scott⁵ at Queen's University. Alas he died tragically in a Belfast plane crash in 1952. His work on the temporo-mandibular joint was published posthumously.⁶

Conservative dentistry

After what seemed an unceasing toil as an apprentice technician making over 20 upper and lower and several partial dentures, we started on the phantom head course which at its simplest was about filling of teeth. We were taught how to drill teeth to removed decay and then restore them tooth to function using various filling materials. Different to today's students, the first thing we did was to purchase a complete set of instruments: probes and mirrors, excavators, chisels, scalers and an array of essential equipment, syringes, drills, methylated spirit burner, and a miniature cotton waste receiver, all contained in a robust and cleverly designed multi-drawered wooden cabinet. It took time to organise this equipment so I knew where to find a particular instrument at a moment's notice.

I realised we were getting near our ultimate goal of treating patients when we had to select a complete set of teeth from a bowl containing hundreds of recently extracted teeth, some of which still had bits of skin attached to them, to fit in their correct location in the brass jaws of a mock up head, the phantom head. The most difficult part of this task was recognising which tooth went where. Lower molars with two roots and upper molars with three were easier enough, but when it came to premolars, they looked so alike. Were they uppers or lowers? Were they right or left. None of us was absolutely sure?

⁵ W A B Brown, James Henderson Scott (1913-1970): Charismatic teacher, *Dental Historian* 2010; 52: 32-40.

⁶ L A Rees, The structure and function of the mandibular joint, *Brit Dent J* 1954; 96: 126.

And as for which lower incisor was which, who knew. I never thought that in my subsequent career I would publish a booklet on how to identify teeth for archaeologists.⁷

A recently appointed young lecturer, Guy Marrant [later professor of conservative dentistry at the Eastman], was responsible for introducing twenty enthusiastic students to the mysteries of restorative dentistry. In six weeks he had to prepare us for working on patients. After we had set up an upper and lower jaw with teeth we drilled holes in them with a variety of cutting heads or burrs. Our drills were driven with foot pedals. To operate the foot drill at the right speed and apply the drill to the tooth was a feat in itself.

The most used filling material was an amalgam of tin and lead powder mixed with mercury in a pestle and mortar. It fairly rapidly changed from a soft putty consistency to a hard durable metallic substance, and the trick was to get the cavity in the tooth filled up before the amalgam had set. We learned how to make gold inlays. I recall how obsessive Marrant was that the edges of our finished inlays should be totally flush with the enamel surface of the tooth. Some achieved this with astonishing dexterity; and I more slowly followed behind. There were those who were never satisfied until they had achieved perfection, and those who steadily worked away regardless of the time they had to spend. I was more easily satisfied.

One demanding task we had to complete was carving in hard green wax exact replicas to scale of several teeth. It took me hours to reach the required standard: I took the wretched teeth home with me to work on them at night.

We all passed the test and were ready to have our first patients.

First fillings patients

Heaven knows what the patients would have thought if they had realised that we were about to test our newly acquired skills for the first time on them. The patients had been specially selected because they only needed simple fillings. I arranged the appropriate instruments on the bracket table that could be swung backwards and forwards over the patient, firmly took hold of my mouth mirror and probe and tentatively began to explore the patient's teeth for the tell-tale evidence of decay. I don't remember being told that cold mirrors immediately clouded over in the heat of the mouth. So, that I thought was, what the methylated lamp was for, but I noticed how anxious the patient looked as I warmed the mirror in the flame. As my first patient opened her mouth, I was unexpectedly confronted, after practising on the inanimate phantom head, with the additional challenges that the teeth were sandwiched between the resistant muscles of the cheek and tongue and that saliva flowed everywhere hiding the lower teeth from view. I was anxious too, anticipating when the

⁷ W A B Brown, *Identification of human teeth*, *Institute of Archaeology Bulletin* 1985; 21/22: 1-30.

patient would feel pain and shout in agony. How far could I drill before that occurred?

I quickly found a small black spot in an upper molar tooth in which my probe stuck and I began to drill with an inverted cone. We were still only allowed to use foot pedal machines. Electric engines were reserved for the senior students, the assumption being that in our inexperienced state, we could wreak havoc with a powered drill. My first filling was happily very small and after an hour or more the patient was released. Each stage of the preparation had to be checked by a demonstrator: the cavity had to be free of caries and all the fissures, those multiple infoldings on the tooth's surface, had to be cut away, and then the undercuts had to be made to retain the amalgam filling.

We had only had one patient booked in for the afternoon, but later we would have one booked in for every hour. I can hardly believe how exhausted I was by these first patients because when I returned home I sat in a chair and fell into a profound sleep. But after a few weeks I got used to the work. We progressed from small fillings to larger ones, and then came the great challenge of giving a local anaesthetic to stop the pain. It was easier enough to stick the syringe into the soft tissues overlying a tooth, but to inject the anaesthetic for a mandibular block deep into the tissues around where the nerve went into the bone of the jaw was a very different challenge. Thrusting the needle through the muscles could be very painful, but more alarming was the threat that the thin needle would break off deep in the tissues. It happened sometimes, and we were told the needle might never be recovered. By 1947 we were using cartridge syringes, which were a great advance of the old fashioned record syringes into which you sucked the anaesthetic fluid. However, we used detachable needles on several occasions, simply sterilising them between each patient. It says much for the resilience of the human body that there were very few reports of patients complaining. If they did I never heard about them.

Once I started treating patients I rapidly picked up the necessary skills. Our progress was strictly monitored by a number of competent and universally helpful demonstrators who divided their time between Guy's and their private practices. In overall charge was a senior academic, Professor W E Herbert and under him, Mr W A (Nick) Vale. They were responsible for giving us introductory courses to advanced aspects of conservative dentistry. Herbert would demonstrate how, for instance, a crown to cap a tooth was made. He was not a skilled teacher, and of all the clinical lecturers I had, I learned least from him. Vale, on the other hand, was far more effective. It was to him I turned if I needed help. I had a very complex crown to make on one of my early patients. Vale told me to drill parallel narrow holes into an upper central incisor for pins that would secure the crown to the tooth. Success was totally dependent on absolute precision and had to be achieved visually. My problem was realising there was no room for error – a mistake could lead to the loss of

the tooth. I knew I had not got the skills. Vale came to my rescue and after two or three visits the special crown was made and fitted. He led me to believe it was my achievement.

Practising how to restore teeth was spread over several sessions a week for two years, and the number of fillings we did in amalgam and gold and the crowns and bridges we made were publicly recorded every month on a large notice board. Every tooth we worked on was identified by a docket signed by an authorised clinician and handed to the secretary. We did any technical work, eg the casting of inlays, for ourselves under the supervision of the highly skilled technicians. In between we did a short and inadequate course in which we were expected to understand how to straighten children's teeth. We didn't. We learned how to extract teeth under local and general anaesthetics and do minor surgery. All the clinical subjects were accompanied by a series of lectures, which varied a great deal in focus and lucidity. A series of lectures, specially edited for dental students, on medicine, surgery, pathology were among the best lectures I ever had at Guy's.

Patients

Our first patients in any particular branch of dentistry were always the faithful public living near to the hospital. As we became more expert, fellow students would treat each other. Even our relatives would take a chance: I did several gold inlays for my sister and fillings for my brother. I slowly built up a practice of friends. One told me in 1999 that three of the gold inlays were still in place but the amalgam fillings had all been replaced. He remembered I told him they would last 25 years; they have survived 51 years. Apart from the social advantages of treating my friends a special benefit was that in summer, in fine weather fine, we could scrap the appointment and for walks in the country.

Mixed in among these friends and relatives were patients randomly allocated from the waiting lists, so you never knew what kind of person to expect. I was surprised by the confidence that many of the younger professional people had in my fledgling skills. One was studying anthropology: we discussed Margaret Mead and Ruth Benedict whose books I was coincidentally reading at the time. She wondered how I could be happy doing dentistry. Another was an economist who I used to meet for a drink in the West End. It is surprising with so many distractions, that I got sufficient work done to fulfil the required quotas.

Oral surgery

Before extracting any teeth, we carefully revised our knowledge of how these strangely removable mineralised appendages were shaped, how they were attached to the bone and exactly what was their relationship with the

bone. These essential details enabled the experts effortlessly to extract teeth.

An added dimension to extracting teeth was an effective local anaesthetic. This very much depended on knowing exactly where the nerves to the teeth and their surrounding bone and soft tissues were located. Modern patients rarely tolerate pain.

In spite of expert supervision, it was inevitable that in our inexperienced hands roots of teeth were broken and they had to be removed. Sometimes it was easy, but on occasions it involved minor surgery, all of which we learned to do. Our effectiveness was very much related to the skills and confidence of our demonstrators. Mr Roy Whitlock⁸ was so expert that he inspired us all with confidence. Under his guidance many of us achieved very high proficiency. When I was serving as a dentist on my own in Nigeria⁹ I often relied on the knowledge I learned from Whitlock.

Removing teeth under a local anaesthetic was a comparatively steady and measured procedure, but extracting them under a general anaesthetic could be very stressful. Some patients reacted under the anaesthetic in an alarming physical way. Imagine a large room with a robust old fashioned dental chair in the middle with three trolleys to hand: one for the dentist with an array of instruments and forceps; one with instruments and drugs for the anaesthetist; and a third with the equipment necessary to deliver the general anaesthetic and to hold the black cylinders of nitrous oxygen and the white cylinders of oxygen.

The procedure was simple. The patient sat down and was restrained in the chair by placing a thick leather strap around their waist. A cotton wool bung was placed at the back of their mouth to stop the extracted tooth or parts of it going down the trachea and their mouth was propped open by a metal gag which had rubber inserts to rest against the biting surface of the teeth. This gag was critical because the effect of the nitrous oxide is to cause the muscles to contract and tightly close the mouth. Once the gag was in place all was ready for the anaesthetist to put the mask over the patient's nose. The patient was told to breathe steadily. As the oxygen in the blood was replaced by nitrous oxide the patient would go slightly blue and quite quickly become unconscious. If the teeth to be extracted were in the upper jaw or on the lower left jaw, the surgeon, if he was right handed approached from the front, but if the teeth were on the lower right jaw, the surgeon had to stand behind the chair, and then the anaesthetist would somehow continue holding the mask in place without impeding the surgeon. If there were only a few teeth to remove, the operation was swiftly completed, but sometimes when all the teeth were to be extracted, there could be problems. The first was that the jaws would have to be levered open by a Masons gag with handles which could be difficult

⁸ Who later provided outstanding maxillofacial treatment for Belfast bomb injury patients.

⁹ W A B Brown,. National Service in the Royal Army Dental Corps in Nigeria 1951-1953, *Dental Historian* 2010; 51: 76-84.

to use. Secondly the sockets from where the teeth had been extracted bled profusely and the blood obscured the teeth remaining to be extracted. Lastly one felt anxious because many patients under prolonged anaesthesia were at risk. There were other hazards related to the teeth. Roots could easily break off and be left behind in the bone, crowns of broken down teeth could easily fragment. Sometimes patients were very resistant to the anaesthetic and when they came round from the anaesthetic could be very excitable and had to be restrained to prevent them from hurting themselves or others in the room. We were told they were dockers who were sustained by above average intakes of alcohol. I can't believe such high-risk surgery is practised today.

As students we started off by watching the procedure. Then we were given our first experience of extracting a tooth. The surgeon in charge would make sure we identified the correct tooth to extract and that we had chosen the correct shaped forceps for the job; and only intervene if we ran into trouble. The most frequent mistake was the breaking off of roots. They would often be removed on the spot by an experienced operator; but if left they would be removed at a later date under the calmer conditions of a local anaesthetic. I didn't like these sessions, but as I gained a clearer idea of the detailed anatomy of the tooth and the surrounding structures it became easier and less daunting.

East Grinstead

In our final year we went for a day to visit the Maxillo-Facial unit at East Grinstead Hospital run by (later Sir) Terence Ward. He demonstrated his surgical skills while we watched from a balcony overlooking the theatre, which was sealed off by glass panels. Ward removed impacted third molars with such skill that he made the equivalent operations I had seen at Guy's look amateurish. Terence Ward became responsible for establishing maxillofacial surgery as a well-defined discipline. For the latter dentists were encouraged to become medically qualified and eventually had to be. Ward was following in the steps of Kelsey Fry who had worked along side Archibald McIndoe in the plastic surgery unit set up in the Second World War. Ward helped the Royal College of Surgeons to set new high standards for dental consultants in whatever field they were working. In the end, it was all related to the depth and quality of their education and training.

Qualification

I qualified in June 1950. After taking the final exams felt very deflated. I had found the exam papers relatively easy to do, thinking they didn't properly reflect the extent of my knowledge. I applied for a house job at Guy's as did most of us. I was surprised and pleased to get one. I was appointed as house surgeon for the first three months to Mr Alan Thompson, one of the most

energetic and stimulating consultants; and for the second three months to Professor Herbert.

Among the house surgeon's responsibilities to his consultant were to attend his clinics and make notes, and prepare patients prior to in-patient surgery. Thompson was a very competent operator, always looking for improvements and refinements on the standard techniques. I assisted at his operations in a very minor role. He encouraged me to make detailed notes of any case of special interest, or where there was something special to be learned. Thompson was a man of many interests. He was especially enthusiastic about high quality workmanship: a suite of furniture specially designed for him was in an exhibition of Modern Furniture Design at the Victoria and Albert museum.

Working with Professor Herbert was very different. I always carried out his requests as efficiently as I knew how. I used to assist at his in-patient operations. They were usually for the removal of impacted wisdom teeth, nothing particularly demanding. After the teeth had been removed, Herbert would ask me to stitch up the wound.

I did a couple of nights as weekend resident house surgeon for emergencies. It was hell as far as I was concerned. I was called out several times during the night and by Monday morning I was exhausted; but I still had to do a routine day's work, just as the resident house surgeon did every day. I decided there and then that whatever else I might do in dentistry, I would never choose to take an appointment which involved weekend work.

My six-month's house post came to end all too quickly. It was very important to me. I believe it gave anyone, who was appointed to one, credibility for a future career in the hospital or clinical academic worlds.

My next destination was the Royal Army Dental Corps at Aldershot to where I went to start my two years of National Service.¹⁰

Assessment of six years at Guy's Hospital

I am a practically minded person, but not particularly good with doing practical things. I was never adept with my hands in the way that some people are. However I learned to carry out a wide variety of dental procedures to an acceptable standard, but I did not like doing repetitive tasks that I could carry out automatically or procedures that had to be endlessly repeated.

In my opinion Guy's Hospital gave excellent clinical training, which particularly prepared students as dentists to work at a very reasonable level of competence in general practice. The teachers made no pretence of offering a scientifically based understanding of dentistry. Essentially we were taught authoritatively. There was little room for questioning. But that is how it was everywhere at that time.

¹⁰ Ibid.

Guy's Dental Course

Such was my conviction about this I spent my early years debating what aspect of dentistry to pursue. I eventually decided that orthodontics would provide the essential variety of work. But that is another story.