The Adler Museum of Medicine was founded in 1962 and was situated in the grounds of the South African Institute for Medical Research, Johannesburg. It is now housed at the University of the Witwatersrand’s Medical School Campus in Parktown, Johannesburg.

In June 1974 the Museum’s co-founders, Drs Cyril and Esther Adler, presented the Museum to the University of the Witwatersrand which named it the Adler Museum as a token of the esteem in which the founders were held by the University. In addition, the University bestowed the degree of Doctor of Laws (honoris causa) upon Dr Adler and the degree of Doctor of Philosophy (honoris causa) upon Mrs Esther Adler. Until Esther Adler’s death in 1982 she was the Museum’s Honorary Curator while Cyril Adler acted as Honorary Director of the Museum. From 1982 Dr Cyril Adler was appointed by the University as Director/Curator of the Adler Museum, a post he held until his death in 1988.

1975 saw the inception of the Adler Museum Bulletin, the brainchild of Mrs Rose Meltzer. Mrs Meltzer produced the first edition single-handedly and she continued to edit it until her retirement in 1991 and was editorial consultant until her death in 1992.

The Museum contains interesting and invaluable collections depicting the history of medicine, dentistry, optometry and pharmacy through the ages. Items of medical historical interest on display include microscopes and other scientific instruments, early bleeding and cupping equipment with an exquisitely crafted incision knife, ceramic pharmacy jars dating back to the 17th century, a collection of bone china and ceramic feeding cups, some dating from the 18th and 19th centuries, an early 19th century wooden handled amputation set in a wooden case, diagnostic and surgical instruments, treatment apparatus such as one advertised as ‘Patent magnetic electrical machine for nervous diseases’ used by Queen Victoria to ease her rheumatism (19th century) and the first electrocardiograph machine (1917) used in the Johannesburg General Hospital, the original artificial kidney machine used in South Africa, early anaesthetic apparatus, ear trumpets and brass ear syringes (early 20th century), hospital and nursing equipment and medical ephemera.

There are reconstructions of an African herb shop, a patient consulting a sangoma (traditional healer), and a 20th century Johannesburg pharmacy, a doctor’s consulting room, a dental surgery, an operating theatre and an optometry display of the same period. A history of scientific medicine is augmented with displays of several alternative modalities. Other attractions range from a reconstruction of a patient being treated by the famous Persian physician Avicenna to an exhibition of early electro-medical equipment, and a collection of rare iron lungs.

A showcase containing new acquisitions to the collection is constantly changed as donations are received. The objects displayed provide an insight into the range and diversity of the collection.

In the foyer outside the Museum are panels relating to the history of the Cradle of Humankind (Sterkfontein and environs) and a display of replicas from the site give visitors a fascinating glimpse into this world heritage site.

The Museum has a rare book collection and a significant history of health sciences reference library. An archive arranged by subject matter is housed in the library. Biographical information relating to thousands of medical and allied health professionals is available for research purposes which includes photographs, notebooks, academic certificates, records, personal papers and memorabilia of prominent health professionals and academics.

The Museum arranges public lectures, tours, temporary exhibitions and provides excellent facilities for health sciences historical teaching and research.
BOARD OF CONTROL

The Board of the Faculty of Health Sciences, University of the Witwatersrand, Johannesburg, has appointed the following members to serve on the Board of Control:

Faculty of Health Sciences ________________ Adjunct Professor Lionel Green-Thompson
Department of Anatomical Sciences __________ Mr Brendon Billings
Health Graduates’ Association ______________ Dr Paul Davis
Arts, Heritage and Culture, Ekurhuleni Municipality ______ Ms Alba Letts
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Medical Students’ Council _________________ Mr Thabo Leonard Muhango
Other members ____________________________ Dr Catherine Burns
                        Associate Professor Sekibakiba Peter Lekgoathi
                        Dr Ann Wanless

STAFF MEMBERS

Curator ____________________________ Mr Luvuyo Dondolo
Professional Officer _________________ Ms Cheryl-Anne Zillmann
Professional Officer (Collections) ____________ Mr David Sekgwele
Museum Attendant ____________________ Mr Gilbert Singo

ADLER MUSEUM BULLETIN

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Professor Jim Phillips

From 1974 to 1998, the large and interesting collection of medical artefacts assembled by Cyril and Esther Adler was displayed in the Director’s House on the premises of the South African Institute for Medical Research in Braamfontein. The Adler Museum of Medicine was officially handed over to Wits in 1974 when both Adlers received honorary degrees from Wits in recognition of the gift of this important historical collection. The name of the museum was changed to the Adler Museum of the History of Medicine in honour of the Adlers.

In 1975 Mrs Rose Meltzer produced and edited the first Adler Museum Bulletin, the purpose of which was to showcase the museum and to raise the academic and public profile of the study of the history of medicine.

Mrs Meltzer continued as the editor of the Bulletin until 1992 and was assisted by Mrs Adele Kahn who was co-editor from 1978 to 1986; and Mrs Pearl Benatera who was honorary assistant editor from 1987 to 1989. In 1992 Professor Donald George Moyes became the editor until 1995, succeeded by Professor Asher Dubbin in 1996 until 2004. From 2005 to 2014 Professor JCA (Tony) Davies became the co-editor. The Curator of the Museum, Ms Rochelle Keene, served as co-editor of the Bulletin from 2004 to 2014.

Professor Davies’ first editorial in 2005 marked the 30 year anniversary of the Bulletin. From the time he became co-editor, until his retirement in February 2015, he wrote 18 editorials, 5 articles and 3 book reviews.

In 1998, the Adler Museum in Braamfontein closed and reopened in 2002 in the foyer of the Medical School of the University of the Witwatersrand Parkton Campus. During this time the production of the Adler Museum Bulletin continued uninterrupted and this issue marks its 40th anniversary.

After ten years of editing the Bulletin, it is appropriate to take a very brief look at Professor Davies’ career. Although he was born in 1931 in Scotland, he was brought up and educated in Johannesburg. He left St John’s College to train as a medical doctor in London, obtaining his MB BS at Guy’s Hospital. He spent another two years at Preston Hall Hospital working with chest surgeons and learning a lot about tuberculosis. In 1959 he joined the Central African Federal Medical Service in what was then Rhodesia and was assigned to a hospital in Mpiilo, Bulawayo. Later, at an outstation at Shangani, he saw many patients with tuberculosis. He accepted an offer to become the first tuberculosis officer in the country. His tuberculosis eradication campaign was a great success with a network of 67 clinics throughout the Midlands province. Professor Davies returned to London on a WHO Fellowship to do a Diploma in Public Health at the London School of Hygiene and Tropical Medicine. He returned to Salisbury (now Harare) to work in the City Health Department. Eight years later he moved to Wits with a joint post as Director for the National Centre for Occupational Health. In 1996 Professor Davies retired but continued to work at the NIOH, which became the NIOH, for 19 years. His work at the NIOH was pro deo. His ‘grace and favour’ office at the
NIOH allowed him to continue his work on diseases associated with the mining industry. He was a worker advocate throughout his career and beyond and had a particular interest in the health of workers and chest disease. His work brought him into conflict with big business and he has been involved in several legal cases. In addition to medico-legal work for the police in Zimbabwe, he gave evidence in cases against a fertilizer factory, a bone meal factory, a mercury plant and asbestos mining companies. The result of these asbestos mining cases was the establishment of trust funds worth millions of rands to assist asbestos workers and their dependants. Professor Davies states with confidence that industry will continue to lose court cases so long as they have money and lawyers but no measurements.

After a long and significant career in medicine, Professor Davies, together with his wife Deirdre, has finally retired to Kenton-on-Sea on the Eastern Cape coast. We wish them happiness in their well-earned retirement.

As far as we are aware, the Adler Museum Bulletin is the only journal devoted to the study of medical history on the African continent. Through the museum’s web site requests for articles are received from scholars of medical history from around the world. The Bulletin was recently listed on the ResearchGate portal and has already had 405 profile views and 53 publication downloads. Interestingly, seven of these downloads were the last week of May 2015.

In addition to being a scholarly resource, the Bulletin has become an important vehicle through which Wits Alumni are given space to publish their autobiographies. It was in fact in the June 2005 Bulletin (31[1] June 2005) that the editorial stated: ‘One of the functions of this Bulletin as we see it is to record the immense contribution that the Faculty of Health Sciences and this Medical School has made, through its graduates and alumni, locally and internationally.’ In an editorial in December of the same year (31[2]: December 2005) Professor Davies wrote: ‘Many South Africans [have] made contributions of global significance and only they can tell us how these came about – how much was chance, how much a long hard slog or how much was due to the welding together of a productive team with common interests. It is our intention to seek out and publish these stories in order to ensure that as much of this history is recorded and preserved.’ The editorial went on to list many of the contributions received and solicited and ended: ‘[We] would welcome [readers’] suggestions for future articles, or better still, a contribution written frankly and without (false) modesty.’

In this issue two distinguished Wits graduates give accounts of their careers and their contributions to the discipline of paediatric medicine. Norman Silverman and Denis Daneman have made significant contributions to the study and practise of paediatric echocardiography and diabetes respectively. Both had careers in paediatric disease and both were descendants of immigrants. Currently there is much debate around the subject of immigration into South Africa the two biographies are testimony to the positive aspects of immigration. They both attest to the excellent training they received at Wits Medical School and both have recalled many of their teachers with great respect and admiration.

Scholars of the history of medicine will not need reminding of how illness can change the course of history. The fascinating story of Fredrick III, Crown Prince of the German Empire, is told with insight by another old Witsie, Peter Warren, an ear, nose and throat surgeon in Durban. Had Frederick not succumbed to cancer of the larynx, the course of history may have been fundamentally changed.
The story of Morell Mackenzie and his famous patient, the most celebrated case of laryngeal carcinoma in the history of otorhinolaryngology, is of great interest from both a historical and a medical perspective. The lessons derived by reviewing the events are still applicable today.

In the history of mankind, there are many examples of a single event which changed the course of history. This illness was one such event: it was a real life drama in which the various characters created huge controversy which sent shock waves through Europe in the late 1880s and which to this day is still being felt. Medical practitioners find the saga interesting in the light of medical practice today: doctors under stress (typically the result of factors such as interpersonal conflict with colleagues, adverse outcomes in management of a special patient, public exposure in a negative light), the media which is increasingly hostile to doctors and external interference from politicians and other controlling groups. Little has changed in a hundred years.

THE PHYSICIAN

Morell Mackenzie underwent medical training in the middle of what is generally recognised as the golden age of medicine. That was a time lasting a little over a decade in the mid-19th century when the face of medicine was transformed by several important developments.

Claude Bernard advanced the science of physiology. Louis Pasteur and his germ theory of disease was probably the century’s greatest gift to medicine. Rudolf Virchow founded the speciality of histopathology and Joseph Lister developed the concept of antiseptic surgery. Florence Nightingale was responsible for professionalising nursing. America’s contribution was the introduction of general anaesthesia which changed the practice of surgery. William Green Morton gave the first ether anaesthetic at the Massachusetts General Hospital, 16 October 1846.

Another big change in the medical profession at that time, and one which rescued medicine from the hands of charlatans in England, was the passing of the General Medical Act of 1858. This regulated entry into the profession by requiring compulsory registration of practitioners who had undergone recognised training and passed a qualifying examination. Morell Mackenzie, having just qualified, was one of the first registrations.

This age also saw the birth of the speciality of laryngology, brought about by the development of the laryngoscope as it was known then. The laryngeal mirror, as we know it now, was actually discovered by Manuel Garcia, a singing teacher. He had the bright idea of viewing his own vocal chords by means of a dental mirror and described the technique of autolaryngoscopy. This was described in a paper he read to the Royal Society.
of Medicine in 1855, a technique taken up with enthusiasm by some physicians. They further developed the technique to use on their own patients, the principle pioneer in this respect being Professor Johan Czermak of Budapest.

Morell Mackenzie was the eldest son of a Sussex general practitioner. When his father died after an accident while doing a house call, he had to leave school at age sixteen, but being extremely bright he completed his studies at night school. He then had the good fortune of having a doting and wealthy aunt who sponsored him to study medicine. She also provided funding for him to undertake two years of postgraduate studies on the Continent. While in Budapest in 1861, he learned the technique of laryngoscopy, acquired the instrumentation and then took back to London his newly acquired skills. He became one of the first British laryngologists, and went on to become one of the most distinguished laryngologists of his generation. He is generally known as the father of British laryngology.

Apart from winning awards and collecting degrees and qualifications at regular intervals, Mackenzie wrote extensively on his subject. His second book, published in 1871 detailing his experience with one hundred cases of laryngeal lesions, established him as a foremost authority on laryngeal neoplasia. His major work, a two-volume text published in 1880, “Manual of Diseases of the Nose and Throat”, became the definitive British work in the speciality until the mid-20th century. He founded the first hospital in the world devoted to diseases of the throat at Golden Square in London. This hospital rapidly became the centre for diseases of the larynx in Europe. A teaching mecca, it was a model for many such hospitals which later started in Europe and the USA. When Felix Semón (later to take up the mantle of premier British laryngologist after Mackenzie) visited Golden Square as a young graduate, he was amazed at the wealth of clinical material which far exceeded that of all the departments of Vienna and Berlin put together. Mackenzie documented over a thousand cases of laryngeal syphilis in his first 10 000 patients.

Mackenzie designed a number of instruments for use in the larynx under indirect vision and was described as a practitioner of breath-taking technical ability. He could invariably remove a laryngeal polyp at first attempt: a remarkable achievement considering cocaine was only introduced as a topical anaesthetic agent in 1880.

At the height of his career he had a very large and thriving private practice in Harley Street, larger than any other specialist in London at the time. He regularly saw up to sixty patients a day, charging £2 for a new patient and £1 for a repeat visit. This enabled him to earn up to £15 000 per year at a time when each pound would buy an equivalent of about £50 today. Income tax in 1880 was thruppence per pound.

Mackenzie had been in practice some twenty six years and was at the pinnacle of his career when Dr John Reid, Physician to Queen Victoria, called on him and requested him to leave immediately for Berlin for an urgent consultation with the Queen’s son-in-law, Frederick William III, Crown Prince of Germany and Emperor in Waiting, who was hoarse.

**THE PATIENT**

The dominant political figure in Germany at the time was Otto von Bismarck. Following the unification of the German States, the German Empire came into being in January 1871 with Bismarck as Chancellor and the ageing Wilhelm (William I) as Kaiser or Emperor. Both men were deeply conservative and ensured an authoritarian militaristic German state with all the Prussian values of discipline, order and obedience. Bismarck, the “Iron Chancellor”, was very much in control of Germany’s foreign policy and relations. He strove to maintain a delicate balance of power in Europe so as to keep Germany strong. Essentially he tried to keep France isolated by forming alliances with Russia, Austria and Italy, and generally encouraged Britain to continue pursuing her policy of “splendid isolation”.¹⁰

Mackenzie's laryngeal instruments
despised by his parents. Born with a deformed left arm, which prevented him from having a normal childhood, his was a lonely and indulged early life controlled by authoritarian tutors and governors. His relationship with his English mother and numerous cousins who teased him unmercifully, was poor. This all clouded his future political conduct. He grew up into the arrogant, selfish, strutting and self-glorifying young man seen in the portrait done soon after the death of his father.

THE ILLNESS

Frederick became hoarse in January 1887. His personal physician, Dr Wegner announced that “the Crown Prince had taken cold and would soon be restored to health”. There was, however, little improvement and in March he called in Professor Carl Gerhardt, Professor of Clinical Medicine at Berlin University. He was a general physician with some skill in indirect laryngoscopy.

Gerhardt managed to see the vocal cords and noted a smooth growth on the left cord. He tried to remove this with some of the primitive instruments available in Berlin but was unsuccessful. He then

Frederick, William I’s son, was a completely different kettle of fish. A gentle and good humoured man, he had a military background and was a very popular figure in Germany having distinguished himself in the unification wars. However, after spending some time in exile in England, his political character was both liberal and democratic. He was a great admirer of Gladstone and the Liberal Party.

In 1858 he married Queen Victoria’s eldest and favourite daughter, Victoria (Vicky). She was said to exceed him in both intelligence and vigour and was politically very aware. She certainly had a great influence on him in all his political and other attitudes. He was due to take over as Emperor from the ageing William and it was expected that he would substantially reverse the autocratic Bismarckian system in Germany and certainly have more amicable relationships with Germany’s neighbours. Importantly, there was undoubtedly going to be a close union with Britain under his rule.

The only perceptible cloud on this idyllic horizon was his son William II, known as Willy. Willy for various family and personal reasons, developed into the epitome of the Prussian autocrat so
delivered daily galvanocautery over a fortnight, again using the laryngeal mirror, but improvement in the Crown Prince's voice was very limited. The physicians then prescribed a short period of rest and Prince Frederick and Princess Vicky travelled to Emms on the North German coast. From there Vicky wrote to Queen Victoria: “Part of a little granula which Prof. Gerhardt could not take off with the hot wire because the throat was too much irritated, is still on the surface of one of the stimmbander and will have to be removed when we go home. Then I think the hoarseness will quite disappear”.7

Sadly when the couple returned to Berlin the Crown Prince's voice was barely more than a whisper. The doctors felt that further help should be sought and Dr Ernst von Bergmann was called in on Monday 16th May. He was a suave and charismatic man, the leading German surgeon of his generation but untrained in laryngoscopy. On the basis of Gerhardt's findings, he announced that the growth was almost certainly cancerous and should be removed forthwith by a thyrotomy approach. Operating tables and nurses were hired and surgery arranged for the Saturday at the Palace. Thyrotomy (or laryngofissure) was infrequently practised at that time for removal of lesions of the larynx.

Von Bergmann claimed that he had himself undertaken several such operations with success in every case. The other operation performed on the larynx in the 1880s was of course total laryngectomy, mostly done for syphilis or tuberculosis, but also for malignant disease. Theodor Bilroth (1829-94), the famous Chief of Surgery in Vienna, had performed the first laryngectomy fourteen years earlier, but it had few supporters as the peri-operative mortality rate was extremely high.

When the suggestion of surgery became known to Princess Vicky, she was alarmed and demurred. She wrote to her mother: “The idea of a knife touching his dear throat is terrible to me. Of course Fritz is as yet not to know a word about this.”7 Bismarck supported her and later wrote in his memoirs: “The doctors are determined to make the Crown Prince unconscious and to carry out the removal of the larynx without having informed him of their intentions. I raised objections and required that they should not proceed without his consent.”9 The Kaiser agreed and on his instructions the proposed operation was forbidden. Three further opinions were sought: Fredericks's personal surgeon, the physician-in-chief to the German army and a Berlin laryngologist, Professor Tobold. On Wednesday 18th May the six German doctors delivered their consensus opinion: the growth was malignant and surgery as recommended should be performed.

The Crown Princess, the Emperor and Bismarck demanded another consultation. Gerhardt and von Bergmann thought this was a mere formality and agreed. The choice fell naturally on “the greatest living authority on diseases of the throat at that time”, Morell Mackenzie.10 Princess Victoria was greatly relieved as she considered English physicians superior to German physicians. This was the result of many factors, including Willy's birth injury. The German newspapers noted with disdain the calling of an English physician to examine the Crown Prince.

Mackenzie arrived on the Friday and having been fully briefed by the six German doctors, examined the throat of Prince Frederick. Whilst he had his suspicions about the nature of the laryngeal growth, he declared that in his opinion no operation, least of all an operation with a high mortality and an uncertain outcome, should be performed until there was microscopic proof that the growth was indeed cancerous. He proposed performing a biopsy and sending the specimen to Virchow who was at the time resident in Berlin.
The operation was put on hold and on 22nd May in the presence of all the doctors concerned, Mackenzie cocainised the throat and succeeded in getting a specimen at his second attempt. Virchow reported that no malignant tissue was found but requested a larger specimen.

Mackenzie had undertaken the biopsy with borrowed and inferior instruments so he proposed allowing the larynx to settle while he travelled back to London for his own instruments before repeating the biopsy. By now there were signs of dissonance amongst the doctors with the German doctors getting decidedly disgruntled about the delay in treatment. A repeat and substantial biopsy was done on 7th June. Virchow’s extensive report was essentially negative, but he did not entirely rule out malignancy. Princess Victoria and the politicians sided with the more favourable opinion of Mackenzie, and the operation was abandoned, much to the chagrin of Gerhardt and von Bergmann. There was now open warfare between Mackenzie and the German doctors and Gerhardt warned about the consequences of any further delay. Frederick did not seem to have any say in the decision making and it seems he was kept in ignorance as to the true state of affairs by his wife and his doctors, although just about everyone else knew what was going on.

As Frederick and Vicky were due to leave soon for Queen Victoria’s golden jubilee celebration of her accession to the throne, it was decided by all doctors concerned that Mackenzie would thereafter be the physician in charge and monitor the royal throat closely.

The 50th anniversary celebrations in London were lavish and Fritz and Vicky were very much in evidence as a dashing couple. By now the popular press in both Britain and Germany were writing daily about the royal couple and the illness. Public hysteria was whipped up and there was a perception in the British media that the German doctors had been unable to adequately manage the illness of the beloved Crown Prince and that he was only saved from certain death by the intervention of the distinguished Dr Mackenzie.

On 28th June, in his own offices, Mackenzie removed what appeared to be all of the remaining tumour and applied galvanocautery. Again the specimen was sent to Virchow and no malignancy was found.

The royal couple stayed in England for the next three months and Mackenzie kept Frederick’s larynx under close surveillance. His cords appeared normal, his voice returned to normal and during this time Frederick and Mackenzie became close friends. In September, Queen Victoria knighted Mackenzie for services to medicine and also for saving the life of her son-in-law. Mackenzie was now a public and national figure. Greatly in demand, people were known to stand on their chairs in restaurants to get a glimpse of him eating his lunch. In medical circles however, Frederick’s management was more controversial. Biopsy and histological diagnosis was not yet generally accepted and in medical journals there was disagreement with his management. Even Mackenzie himself was not optimistic. He wrote to a friend: “I shall not feel safe from anxiety until six months have elapsed since the application of electocautery.”

By October the elderly Kaiser was on his deathbed and Frederick was sent to San Remo on the Italian coast to recover from a mild cold before returning to Germany and preparing for his accession. While there, his health and airway began to deteriorate and Mackenzie was sent for.

Sketch made by Mackenzie on 5 November 1887, showing a large new growth below the left vocal cord.
Mackenzie examined Frederick on 5th November and, seeing a sinister subglottic swelling, he realised to his horror that the German doctors had been right after all. The Crown Prince asked: “Is it cancer?” Mackenzie replied: “I am sorry to say sir, it looks very much like it, but it is impossible to be certain.” The Prince received this with calmness. After a moment’s silence, he grasped Sir Morell’s hand and said: “I have lately been fearing something of this sort. I thank you Sir Morell for being so frank with me.” Mackenzie immediately requested more consultations: two eminent and unbiased laryngologists, one from Vienna and the other from Berlin were chosen and they concurred with the diagnosis. Eleven months after his symptoms had begun, the patient was given a say in his management for the first time. Frederick was offered the choice of either total laryngectomy or of no treatment, but having a tracheostomy if it became necessary. After a time of reflection he chose the latter. Telegrams were sent to the Kaiser and to Dr Reid for Queen Victoria. The press were also notified.

This catapulted the Crown Prince’s illness into the International press and they descended on San Remo. Mackenzie would often have a posse of thirty reporters following him around. Like today, the press had no regard for personalities or the feelings of the people concerned and claimed that the Royal family were newsworthy items and that their most intimate affairs were of public interest.

On 13th November the 91 year old Kaiser, learning of his son’s decision, sent for eight of the German doctors who had been looking after Frederick. He asked them two questions: Should the radical operation be advised in spite of Frederick’s refusal; and why, when the operation was abandoned in May, was it suggested again at such a late stage in the illness? To the first question they answered that as the operation was so dangerous the patient must decide and to the second they replied that: “the responsibility for its non-performance until too late had been incurred by that physician who had overlooked, nay even denied, the increase of the growth”, namely Morell Mackenzie. The German press was furious. The prince of Germany would die because of the mistake of an English doctor while the opinion of the German doctors, who had been correct, was set aside.

Mackenzie remained aloof and countered the criticism by stating that he had relied on the findings of the world’s leading pathologist, Virchow, who had found no indication of malignancy and predicted a favourable outcome. Virchow of course denied this and stated that Mackenzie had not biopsied the real tumour below the cords but rather another benign lesion on the cords. By January Frederick was most unwell, losing weight and coughing up sloughs of tissue. He spent his days in his dressing room, sucking on ice and wearing ice bags around his neck day and night. Publically the Royal couple put on a brave face but privately they were in great anguish. To Queen Victoria Frederick wrote: “To think that I should have such a horrid, disgusting illness. I had so hoped to be of use to my country. Why is heaven so cruel to me? What have I done to be thus stricken down and condemned?” Vicky’s pessimism showed when writing to a friend: “Who can tell us how much time he will still be granted?” The press set up a macabre vigil and the world watched with interest as events unfolded in Germany. Would the elderly emperor, obviously now in decline, die before his son suffocated?

On 9th January 1888 Frederick’s airway became obstructed and the long deferred tracheostomy was performed by a Dr von Bramann, von Bergmann’s assistant in San Remo. An illustration from a magazine of the period graphically depicted the tracheostomy in progress.

The elderly Kaiser finally died on 9th March and Frederick travelled to Berlin to begin his short Imperial reign. By then he was too sick to attend his father’s funeral and handed most of his duties over to Bismarck. By April the tracheostomy site was indurated and surrounded by fungating tumour.

On 12th April, Frederick was deeply cyanosed and had stridor which could be heard in the next room. Professor von Bergmann changed the tracheostomy tube in the presence of Mackenzie. Frederick had a violent attack of coughing and bled profusely for some time from the tracheostomy. Mackenzie accused von Bergmann of ill-treating the emperor and making a false passage in the neck. He did not hesitate to say that Fritz had received his deathblow at the hands of von Bergmann. This was the parting ways for Mackenzie and von Bergmann and on 30th April von Bergmann retired from the case.
Early in June Frederick moved to the Neue Palais where he had been born. By 13th June Frederick’s condition was deteriorating rapidly. He was being fed by tube and the fungating tumour was causing an awful smell. Vicky wrote; “My poor darling is so changed! He is a perfect skeleton now and his fine thick hair is quite thin. His poor throat is such a painful and shocking sight that I can often hardly bear to look at it … it is very difficult to keep the air in the room pure.” Two days later at 11:00 on 15th June 1888, Emperor Frederick died. He was 56 at the time of his death having reigned for only 98 days.

THE AFTERTHATH

One would have thought that this would have been the end of the sad saga: far from it. Willy, the new Kaiser, impetuous and now openly hostile to Britain, ordered a post mortem on his father. Vicky, very against this, appealed to Bismarck not to allow the post mortem. He refused to see her, stating Prussian law required a cause of death. She countered by refusing to attend the lavish state funeral of her husband. Relations between the two Governments were now at an all-time low.

Emperor Frederick’s post mortem was carried out by Virchow who was eager to clear his nam e. He concluded that Frederick had died from a huge carcinoma of the larynx and pneumonia. It was the last work Virchow performed. Thereafter he retired from medical practice. He was a good friend of Frederick’s and, although he never stated it, it was felt that he blamed himself for Frederick’s death.

The quarrel which raged between Mackenzie and the German doctors did not end with Frederick’s death. A month later the German press office released a pamphlet entitled: “Die Krankheit Kaiser Frederick des Dritten.” (The fatal illness of Kaiser Frederick the Third) Purportedly to document the medical facts of the case, largely written by von Bergmann and Gerhardt, it was a scathing criticism of Mackenzie and his management of the case. It included allegations that he had taken a biopsy from the wrong cord, that he had not sterilised his instruments properly, that he failed to tell the Prince the seriousness of his disease, had obstructed the access of the German doctors to their patient and finally had spirited him off to England without their consent.

Mackenzie was incensed. Queen Victoria and the British Prime Minister demanded that he issue a formal riposte. Mackenzie duly published a booklet, “The Fatal Illness of Frederick the Noble.” Illustrated in his own hand with 21 watercolours of the Imperial larynx at various stages in the evolution of the disease, not only did he refute the allegations made about his involvement, he introduced some of his own allegations of mismanagement by the German physicians. Describing Gerhardt as incompetent, indiscreet and obstructive, he stated that Gerhardt’s excessive electocautery was responsible for turning a benign lesion into cancer. He produced extensive figures on the mortality rate of both laryngectomy and laryngofissure at that time and despite von Bergmann’s claims to the contrary, he demonstrated that operations had an extremely poor success rate, up to 50% immediate mortality and only 6-10% one year survival. He felt the operation would have undoubtedly been fatal. He further alleged that the German doctors shared responsibility for the treatment and wrote that if the case had turned out well these gentlemen would no doubt have been ready enough to claim their share in the triumph.

He graphically described how von Bergmann had created a false passage when changing the tracheostomy tube with some difficulty and in so doing, had created an abscess and so hastened the Emperor’s death. He concluded by saying that the German doctors shared responsibility for the treatment and wrote that if the case had turned out well these gentlemen would no doubt have been ready enough to claim their share in the triumph.

The book was very successful and ran into several editions, not only in English but in German and French as well. The book, however, essentially marked the end of Mackenzie’s career. He was castigated by the Royal College of Surgeons for breach of confidentiality and unethical conduct. He was condemned by the BMA and summoned to a disciplinary hearing of the Royal College of Physicians. Knowing his likely fate, he resigned. His practice in any event had more or less folded. In his thirteen month absence from England, his assistant Dr MacDonald had run his practice and now retained most of it. Mackenzie was depressed, fretful, and inattentive. He had no energy or enthusiasm to resum e his practice anyway. He successfully sued the London Times for slander but the award of £1,500 did not make him feel any better, nor did the payment of £12,000 for his care of Frederick help his anguish. His previous mild asthma got much worse and in
1892 he died a broken man at the age of 54, less than four years after the death of his famous patient.

CONCLUSION

Much has been written about the political consequences of this event. Historians have speculated about what would have happened had Frederick survived. The fact of the matter is that Willy as Kaiser was immature, impetuous and immediately sought to assert Germany’s might and, in so doing, unsettled an already delicate balance of power in Europe. He fired Bismarck, offended France, allowed the treaty with Russia to lapse and at every turn baited and challenged Britain, especially in terms of naval power. And so Europe moved towards World War I.

The medical consequences are of more interest to us: we only have space to mention some of them. The cause of biopsy and histopathological diagnosis was lost for the next few decades. There has in recent years been much debate as to the exact nature of the Prince’s pathology. Was it simply a missed diagnosis? Pathologists will attest to the difficulty of diagnosis sometimes in laryngeal biopsy. Mackenzie was an expert in the field, unlikely to miss an obvious clinical diagnosis which was made by German doctors: why did he pursue his course of action? Was the disease in fact a syphilitic gumma with secondary infection, and with carcinoma a second or later pathology? There is much to support this latter hypothesis, including Mackenzie’s private correspondence with a friend.1

What happened to Mackenzie was unfortunate: he had become a close personal friend and advisor to the Royal couple. It would seem that he had Frederick’s best interest at heart as opposed to most of the other players in the saga including the German doctors, politicians and the press, who had their own personal agendas. Yet it was Mackenzie who bore the consequences of the unfortunate outcome. It is interesting to compare the circumstances surrounding this illness and the management of the throat cancer of Ulysses Grant, the only US President to die of cancer, which occurred at about the same time (1884-1885).14

After the War many in the medical establishment agreed that Mackenzie had been treated shabbily and in 1921 there was a graveside memorial service attended by many medical luminaries, where a marble monument bearing Longfellow’s words was erected:

“Lives of great men all remind us that we can make our lives sublime, and departing leave behind us footprints in the sands of time”

However, if one opens any reference book, under Mackenzie’s name one reads that he is remembered not for his pioneering work and medical prowess, but in connection with the controversial management of Frederick’s final illness.

“Men’s evil manners live in brass: their virtues we write in water.”15

BIBLIOGRAPHY

EARLY LIFE

I was born in Johannesburg, South Africa in 1942 during some of the darkest moments of World War II. My parents were both from poor, uneducated, immigrant Jewish families who, although their formal education ended in the 6th grade, continued their education throughout their lives. Realising the importance of education, they gave me opportunities they were denied, making sure I learned music, graphic arts and singing. My school education took place at Orange Grove Primary School, and at Highlands North High where I played soccer and rugby. I was also in the school chess team. In 1961, after matriculating, I began my study of medicine at Wits Medical School - partly motivated by the fact that, three years after my birth, my sister had been born with Down’s syndrome.

EARLY FORMATIVE TRAINING

I graduated in 1966 and interned in surgery for six months with Professor Daniel (Sonny) du Plessis, and then with Dr Moses Suzman in medicine. This lasted for only six weeks because I was transferred to work in cardiology with Dr John Barlow for the remainder of the six month term. One of the senior cardiology interns working for Dr Barlow had left for private practice. The medical interns devised a lottery for the vacant position in which I drew the shortest straw. This was when my interest in cardiology began. At that time I married Heather Rosenberg, a partnership that has lasted for more than forty-seven years.

During the year in which I served in the South African Defence Force, I spent time in the paediatric area, where I became intimidated by my weakness in examining small children. Therefore, on weekends when I was not on duty at the military hospital, I attended paediatric rounds at the Transvaal Memorial Hospital for Children (TMHC) with Dr Avroy Fanaroff. He encouraged me to apply there for a senior internship. At the end of 1968, after completing my military service, I was accepted into Professor ‘Boet’ Heese’s programme at TMHC where I worked under the close supervision of Dr Solomon E Levin, my mentor and role model, and also Dr Jack Wolfsdorf. These two physicians stimulated my interest in cardiology and research.

I completed my registrarship in 1972, having worked at TMHC and Baragwanath Hospital. I also passed the examination – FCP in Paediatrics. Dr Wolfsdorf, Dr Levin and I discussed where I should go for further training. The choice was between paediatric cardiology and neonatology. I decided pursue cardiology as I liked the intensity of the catheterization laboratory and was intrigued by the prospect of the complexity of cardiology in the young.
I was fascinated by the science of phonocardiography – the graphic representation of cardiac sounds and murmurs in relationship to other physical events within the cardiac cycle. Dr Levin was my instructor in that discipline, as well as in the elements of paediatric cardiac catheterization.

MOVE TO THE USA

Wanting to further my specialisation, I was accepted into the programmes of two former ‘Wits doctors’: Dr Samuel Kaplan of Cincinnati and Dr Abraham (Abe) Rudolph of the University of California. Dr Levin advised me to study under Dr Rudolph, and so began my long journey to the West Coast of the United States. The Vietnam War was winding down and the only positions open to me necessitated my taking out United States citizenship for the purposes of funding, as the National Institute of Medicine Fellowships were only offered to United States citizens.

After much negotiation, Dr Rudolph offered me a post. This was as a National Institute of Health Fellow in the Cardiovascular Research Institute (CVRI), based in San Francisco. I arrived in the USA in the early part of June 1972 to begin my fellowship.

The education programme under Professor Julius Comroe was amazing as he had a broad vision of what it takes to train a successful scientist. Fellows had come from Africa, Asia, Australia, Europe and different parts of America. All were either physicians or scientists interested in the cardiovascular system but with different levels of training and expertise. A three-month course in mathematics, calculus, statistics, electronics, computer programming, medical literature, criticism, the art of scientific presentation, as well as numerous symposia and lectures of public interest were prescribed. Social events for families and opportunities to meet all the course instructors and professors added to our experience. Many of the friendships we made have lasted all our lives.

I began work under Dr Abe Rudolph and his ex-Wits Medical School colleagues, Drs Julien Hoffman and Michael Heymann who introduced me to the animal laboratory and the cardiac unit in the Moffit Hospital within the University of California, San Francisco. I had to assimilate a monumental amount of new information. This required a great deal of time and devotion to understand the elements of cardiac physiology, to work with instruments, to understand the effects of radiation, animal preparation and instrumentation.

Compared to many of the American trainees, I initially felt quite inadequate. With time, I started to feel that I had begun to understand paediatric cardiology and the direction towards which my animal experiments were heading. To be associated with great minds in the field that interested me was a great privilege. I learnt from the many eminent scientists and physicians at the CVRI. Drs Rudolph and Heymann supervised my foetal animal work. I learned a great deal of cardiovascular physiology from them that formed the basis of my understanding of paediatric cardiology. Dr Rudolph was my role model, my surrogate father and mentor and became one of my dearest friends. Even today, at the age of 90, he has a sharp and incisive mind and knows more about foetal cardiovascular physiology than anyone alive.

THE START OF ECHOCARDIOGRAPHY

The university and the CVRI provided an important opportunity for collaboration across many disciplines, and I had the opportunity to meet and work with a co-fellow in adult cardiology, Dr Nelson Schiller. He was in contact with a member of the radiology department, Dr Granville Coggs, a former Tuskegee Airman, radiologist and senior Olympian. Dr Coggs had acquired a new ultrasonographic machine from the Picker Company. It was a simple, modified electronic oscilloscope with a black and white Polaroid® camera mounted on its front end. The camera swept from the bottom to the top of the screen, having enough persistence that, when activated, produced a time-lapse photograph of cardiac motion with respect to time. An electrocardiogram facilitated viewing the relationship of the ultrasonic events from systole to diastole. Nowadays, this is called an echocardiogram.

One could understand why radiologists used to real images obtained by X-ray, thought this system did not have much of a future. Cardiologists on the other hand, especially ones who had been trained in phonocardiography (as I was by Dr Solomon Levin), were quite facile with this form of technology. For the first time we could see graphs of heart valves moving during the cardiac cycle. We could identify signals coming from the muscular walls of the heart and determine how the ventricles were performing. The technique was in its infancy and I started taking the instrument to the nursery in order to gain some experience with it. Dr Nelson Schiller and I shared the instrument equally – or nearly so. I was working during the day in the animal or cardiac
catheterization laboratory so we made a pact that he could use the instrument from 09:00 to 17:00, while I got the instrument at 17:00, and could work in the nursery through the night until 09:00 without bothering the day staff. Our pact worked perfectly!

During my nightly examinations I noticed that premature infants with large patent arterial ducts had large left atria. We began to measure the size of the left atrium and, having no normal values at that time, we made a ratio of the size of the left atrium against the size of the adjacent aortic valve (Figures 2 and 3). Normally the ratio was less than 1, but when it exceeded 1.3:1 the babies were found to require surgical ligation of their patent arterial ducts. After surgery this ratio returned to normal, reflecting diminishing distention of the left atrium due to decreased left-to-right ductus shunting. This was the first time the observation had been made and I presented our group’s experience at a national meeting in Washington DC. The work was well received and formed one of the basic measurements indicating a large ductus shunt in premature infants.

**ESTABLISHMENT OF ECHOCARDIOGRAPHIC LABORATORY AT UCSF**

After my fellowship I accepted a position as Assistant Professor of Pediatrics at Stanford University, where I worked for one year. I continued my own animal research at Stanford but used many of Dr Rudolph’s facilities to analyze my research. He was most generous, allowing me the use of his facilities and finances to complete my work. I was attracted back to UCSF the following year (1975) by Dr Rudolph when a noted congenital heart surgeon, Dr Paul Ebert, accepted a position at UCSF. Dr Rudolph needed someone to run the newly established echocardiographic laboratory to support his work. I published a paper on normal ultrasound values which were needed in the paediatric area.

My colleague, Nelson Schiller, and I tested a new two-dimensional echo machine made by a local company, Varian Physics of Palo Alto, California. Being a local company, they gave a trial instrument both to UCSF and to Stanford.

The machine was initially unusable for babies as the heart scale on its television screen was 21 cm, while the heart of a neonate is less than 5 cm, and a premature infant less than 3 cm in depth. These small hearts were obscured by the initial noise coming from the transducer. The company wanted feedback on the instrument and, after I told them about its unsuitability for small infants and children, it was redesigned with magnification so that even neonates could be examined. With the new technology we were now able to evaluate many more infants.

Dr Schiller and I pondered ways of imaging the heart with the probe that were different from the conventionally accepted precordial examination windows. We looked at imaging from the cardiac apex. This angle produced an image of all the four chambers of the heart – the apical four-chamber view. This is like a St Valentine’s heart.
but inverted, so that the atria lie in the round part of the heart and the apex of the image contains the ventricles - a view applicable both to adults and to children (Figure 4).

We began collecting all of these data, and I was able to work out how to evaluate congenital heart disease using the four-chamber view. I could define holes in the septa of the heart, the relative size of the chambers, the thickness of the walls, and whether there was under or over-development of any of the chambers. In 1977, I submitted an abstract to the American College of Cardiology meeting in Las Vegas. Our studies had been recorded on broadcast-quality videotape that had to be converted to 16 mm film for the meeting. Varian sponsored the expensive conversion.

On the opening Sunday of the conference, because the adult section had not yet begun, all of the attendees came to the paediatric meeting where I was the third presenter. Everything went off without a hitch. At the end of any presentation there is usually applause, either polite or enthusiastic, but at the end of my presentation there was stunned silence. The audience appreciated the momentous nature of our discovery; one that has been adopted by the medical community at large and is now used thousands of times a day by cardiologists and imagers around the world. That evening I became a Fellow of the American College of Cardiology.

TWO-DIMENSIONAL ECHOCARDIOGRAPHY

Over the next few years the echo laboratory thrived. Dr Rebecca Snider was one of our first fellows. She become fascinated by echocardiography and joined me in writing the first book on paediatric two-dimensional echocardiography. Everything we saw was new. We collected many series and published on a variety of structural congenital heart diseases as well as examining physiologic variables such as two-dimensional measurement of ejection fraction, a commonly-used index of cardiac function. The information I gathered from these studies led to the publication of this book (See book 1).

I discovered another view for examining the heart through the space above the clavicles in the neck called the suprasternal space. This is useful for examining the aortic arch, branch pulmonary arteries and the great systemic veins of the upper body. With this view we were able to recognise common diseases like coarctation of the aorta (Figure 5).

Figure 4: This figure has a two-dimensional image with a diagramme of the heart superimposed upon it and shows the four chamber image of the heart applied from the apical application of the transducer to the chest wall.

Figure 5: Application of the transducer to the suprasternal notch and the diagramme of what can be seen with coronal (left) and sagittal (right) orientation of the transducer. The lower frames are the corresponding echocardiograms in those planes. These images are from 1981.
DOPPLER ULTRASOUND TECHNIQUE

In the early 1980s, the Doppler ultrasound technique which bounced ultrasound waves off the red blood cells became available. We were able to measure blood flow directly in the vessels, and to estimate pressure drop across stenotic and regurgitant heart valves. We began to evaluate this new technique with our fellows and to publish our findings in recognised journals.

THE USE OF CONTRAST ECHOCARDIOGRAPHY

I also began to use contrast echocardiography, first described by Dr Raymond Gramiak, to follow the passage of blood through the heart in congenital heart disease. Using tiny quantities of aerated saline injected into the veins of our patients with congenital heart disease, we were able to provide remarkable images of abnormal patterns of blood flow, particularly where this occurred inappropriately through abnormal communications and defects in the heart.

EXPERIENCE WITH FOETAL HEART ECHOCARDIOGRAPHY

Working with some of my obstetrical colleagues I had begun imaging the foetal heart using two-dimensional ultrasound. At the outset, with this technique I obtained images of foetal cardiac abnormalities from the 20th week onward (Figure 6). Later this technique was applied to younger foetuses from the 12th week of gestation onward.

WORK WITH PROFESSOR ROBERT ANDERSON IN LONDON

I had always been intrigued by pathological descriptions of heart defects. Indeed, I found it very difficult to relate to images in the literature and was much more familiar with the angiographic appearances of these lesions. With the development of ultrasound techniques proving to be ever more valuable, a detailed understanding of the morphological aspects of morbid anatomy seemed to me essential. My colleague, Dr Michael Heymann, gave me a book detailing the proceedings of a symposium in Newcastle-upon-Tyne, England. After reading about congenital structural heart abnormalities I felt that a new world had sprung into my view.

As another physician, John Keats, had remarked about looking into Chapman’s Homer:

“Then felt I like some watcher of the skies
When a new planet swims into his ken.”

Professor Robert Anderson of the Brompton Hospital, London and his book on patients with only one ventricular chamber was the new planet in my world. I resolved to go and work with him. When I had my first sabbatical in 1982, I went to London for six months with my family. I worked every day in Professor Anderson’s laboratory, examining almost every one of 1500 specimens and familiarizing myself with the fine details of abnormal heart structure that proved so vital for someone working with imaging the pathology of cardiac diseases. I wrote an important paper with Professor Anderson on the comparative anatomy.
of the cuts produced by ultrasound in the normal heart, as well as papers on other structural abnormalities with Dr Leon Gerlis, who worked with Professor Anderson and the clinical group at the Brompton Hospital.

RETURN TO USA

I returned to San Francisco to find that Dr Snider was soon to leave for the chief’s position at the University of Michigan. I was then alone, in charge of an ever-growing echocardiographic laboratory. However, because of the abundance of new and vital knowledge, cardiovascular trainees flocked to the laboratory wanting to participate in the new discoveries.

In order to keep them motivated, and because there was great competition for their attention within the CVRI, I instituted a wine and cheese appreciation course, in addition to our weekly fellows’ conference. These meetings proved enormously popular with the fellows who came, perhaps, for the food and wine but became infected with enthusiasm for the investigational aspects of my work. The fellows were usually productive, and many made great strides and presentations. It is said that one can see far when one stands on the shoulders of giants. I believe that I was able to see far for this reason, and also because I was able to stand on the shoulders of my fellows who produced insightful publications.

I need to single out many post-doctoral fellows who produced outstanding and wonderful publications, including Dr Klaus Schmidt from Heidelberg, Germany, Dr Rebecca Snider from South Carolina, Dr Wayne Tzvetkzy from Cape Town, Dr Doff McElhiney from San Francisco, Dr Mark Friedberg from Israel, Dr David Roberson from Chicago, Dr George van Hare from St Louis, Dr Thomas Kohl from Giessen, Germany, Dr Colin Phoon from New York and Dr Rajesh Punn from San Diego. They helped open up new areas of ultrasound with their research and hard work.

In 1985, Dr Klaus Schmidt from Heidelberg arrived and immediately plunged himself into working with ultrasound, and in the animal laboratory, accumulating as much experience as he could. I had received a grant from the American Heart Association for evaluating the foetal circulation, and we studied instrumented animals, courtesy of the ever-supportive Dr Rudolph.

We used Doppler colour flow and two-dimensional ultrasound to define several aspects of the circulation, which spawned a great number of papers that provided understanding of several mechanisms of flow physiology at the sites where mixing of blood streams in the foetal circulation occurs (Figure 7). We also measured foetal cardiac function. The measurements showed a close correlation with the physiological variables measured in chronically instrumented foetal lambs that were part of Dr Rudolph’s ongoing research (See Adler Museum Bulletin: 33[1] June 2007). Thus we took what we had learned in the foetal animal laboratory and applied these techniques to the human foetus.

**Figure 7: Foetal blood flow in a foetal sheep demonstrates Doppler colour flow in the inferior vena cava (IVC). The degree of brightness varies are coded to show velocities of blood flow that are different. This image shows the separation from the high-velocity ductus venosus blood stream (light signal), which is well saturated with oxygen and the rest of the lower body flow (dark signal) from the inferior vena cava (IVC), which has desaturated blood. The ductus venosus blood goes directly into the left atrium (LA), bringing oxygen-rich blood to the brain and heart.**

DEVELOPMENT OF NEW TECHNOLOGY AND APPLICATION OF TRANS-OESOPHAGEAL ECHOCARDIOGRAPHY TO CHILDREN

In 1986 Hewlett Packard provided us with a new ultrasound instrument in which Doppler colour flow had been integrated. This system, developed first in Seattle, Washington, and then in Japan by the Aloka® Company, provided a two-dimensional image of flow superimposed on the image of the heart. For the first time we could see
blood flow in vessels, see through holes in the heart, and image cardiac leaks and blockages. The technique was more sensitive in recognising the site and amount of flow, both normal and abnormal. In addition, we were able to acquire images of pulmonary veins that drained abnormally, abnormal coronary arterial flow, and the presence of coronary arterial fistulae. We also used the technique to evaluate disease in the foetus.

A colleague since 1982, Dr Nelson Schiller had begun working with an ultrasound probe embedded in a gastroscope that could be passed down the oesophagus of adults to image the heart from its posterior aspect (trans-oesophageal echocardiography [TEE]). Adults have thick chest walls that often preclude imaging, and the oesophageal route both overcame that impediment and created some clear images. In the late 1980s, driven by Japanese electronics companies, the technique of Doppler colour flow was added to miniaturized transducers that could now be safely passed via the oesophageal route in neonates. We first explored the use of this technology and found it to be of enormous benefit in the management of patients during operation. Because we could look at the results of the surgery immediately after the heart began to beat, but before the patient was separated from the heart-lung machine, we could evaluate whether the operation was adequate, whether the repair was satisfactory, and whether there were additional operative procedures that would benefit the patient. The TEE technique led to better surgical results, making a barrage of post-operative tests unnecessary. I worked on this aspect of care with my cardiac post-doctoral fellow, Dr David Roberson of Chicago, and the anaesthesiology team headed by Dr Michael Cahalan of Salt Lake City. I also worked with Dr Isobel Russell and Dr Lydia Cassorla and published several papers on the value of the technique.

TEE soon became the standard of care for patients undergoing cardiopulmonary bypass and the technique itself is considered to be one of the most outstanding discoveries since the institution of cardiac catheterization.

At that time our laboratory was recognised as an outstanding institution and many publications followed. During the next few years I was joined by Dr Michael Brook and Dr Theresa Tacy. Dr Brook succeeded me as the director of the echo laboratory at UCSF when I stepped down from that position in 2002. Dr Tacy succeeded me as director of echocardiography in 2008 from my position at Stanford.

I first collaborated with Dr Charles Higgins, a radiological colleague in magnetic resonance imaging (MRI), to write a book concerning the relative value of MRI and echocardiography, being joined in this endeavour by our two fellows, Dr Klaus Schmidt and Dr Barbara Kersting-Summerhoff.

I had begun writing a second book on echocardiography because our experience had grown so substantially since our first volume, with assiduously collected material. Williams and Wilkins published this book in 1990 (See book 2). My second book on echocardiography appeared in 1993 and was over 600 pages long. It contained instruction on basic anatomy and physiology, on echocardiographic techniques and on all the congenital and acquired diseases with which I had experience. There was also an extensive chapter on foetal cardiology. My associates David Roberson and Isobel Russell joined me in writing the chapter on TEE. I was honored to have my mentor, Dr Abraham Rudolph, write the preface (See book 3).

BEYOND 2000

In 2003 I was asked to write a book on foetal cardiology with Drs Simcha Yagel of Israel and Dr Ulrich Gembruch of Bonn, Germany (See book 4). This volume proved so popular that a second edition was published in 2008 with many additions, including the use of three-dimensional technology of the foetal heart (See book 5). I invited several authors to write new chapters on foetal cardiac physiology and incidence. That same year I authored a book in foetal echocardiographic anatomy with Drs Enrico Chiappa of Turin, Italy (also a former fellow), along with Drs Andrew Cook of London, and Giani Botta, a pathologist from Turin (See book 6).

Over the years I have gravitated to teaching and mentorship, augmenting my teaching sessions to include echocardiography in all of its dimensions to fellows of various disciplines who are interested in paediatric cardiology. Fellows included surgeons, anaesthesiologists, radiologists, neonatologists and perinatologists.
My wine-tasting sessions have become an important part of my teaching and many attending cardiologists came in to sample the beverage but stayed for the education.

My other major teaching adventure, still ongoing, in addition to my regular day-to-day activities, is the weekly session of morbid anatomy of congenital heart disease. I do this in the morgue at UCSF where the curator, Dr Phillip Ursell, lays out the particular diseases to be studied from his collection of over 1800 heart specimens. I started this practice in 1982 which continues until today. Even after I left UCSF for Stanford I continued the sessions, teaching the Stanford interns and post-doctoral fellows with the UCSF fellows.

During the one hour drive to UCSF I reviewed the embryology, anatomic classification and cardiac catheterization of the lesions to be seen. The actual session consists of an hour of examining heart specimens with the particular selected disease. In the last few minutes I record the pathology with a video camera to display to future generations of students, because the number of cardiac specimens remaining in teaching libraries around the world is declining. On the drive back to Stanford the group has an hour’s symposium on medical and surgical treatment of the conditions and the philosophy of the therapeutic manoeuvres associated with the specific lesion they have seen. All-told the session lasts for three hours, and is a highlight for all the fellows.

In the late 1990s Stanford University and the UCSF discussed the possibility of a merger. Paediatrics and cardiology were targeted for amalgamation. I was appointed echo-director of both institutions and began visiting Stanford where I got to know the team one day a week. The merger ultimately failed, but I retained my association with both institutions. I lived near the Stanford campus and, after the 1989 earthquake brought down part of the freeway system, the commute to UCSF become tiresome. Dr Daniel Bernstein, one of my former trainees and then director of paediatric cardiology at Stanford, and I began to discuss the possibility of my returning to Stanford. In August 2002, I re-joined the faculty.

I brought my previous teaching methods and symposia to Stanford, and improved the standards of the ultrasound technologists with extensive tuition. Dr David Rosenthal and I digitized the reporting system, making the reports immediately accessible to all physicians.

Dr Frank Hanley, chief surgeon at Packard and a noted leader in paediatric cardiac surgery had left UCSF for Stanford six months before and we were happy to renew our association. We were able to increase the faculty, attract high-quality fellows to the programme and produce numerous research papers. I was fortunate to continue to mentor excellent fellows who entered research and teaching positions at other universities and also entered private paediatric cardiology practice.

During my career I have been honoured with many named lectureships and awards. In 2000 I received the founders’ award by the American Society of Echocardiography where I had served on the board since its inception. In 2008 I was again honoured by the society with its teaching award. In 2005, during my tenure as professor of paediatrics and director of the echo laboratory at Stanford, I was awarded the Roma and Marvin Auerback Scholarship in Pediatric Cardiology, a post I held until I retired in 2012. The award was established to teach and mentor Stanford post-doctoral fellows, as teaching is so vital but so poorly reimbursed. The scholarship, created by his wife, Roma, honoured the memory of Dr Marvin Auerback, who had been a paediatric cardiologist in the San Francisco area, my long-time friend and colleague. This award has now passed from me to Dr Stanton Perry and will remain in the Stanford General Fund in perpetuity. Stanford honoured me after my retirement by appointing me Emeritus Professor as well as appointing me to the honorary clinical faculty.

In the course of my extensive travels and visiting professorships through America and around the world, I have enjoyed instructing many in paediatric cardiology and echocardiography. My last reward, of which I am extremely proud, was a long-term honorary professorship at the University of Cape Town. What makes me most proud and provides me with the greatest delight is to see so many of the over 180 post-doctoral fellows succeed and exceed me in their ability, knowledge and success. That remains my greatest honour and legacy.
SEMINAL REFERENCES


BOOKS PUBLISHED


Reflections on a career in academic paediatrics

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My career direction was set in motion by three unrelated events. First, my father’s long-standing and unrequited desire to have been a paediatrician: financial circumstances demanded that he work while pursuing his post-high school education. Law was a more appropriate route to take, so he became a lawyer with the heart and soul of a paediatrician. My decision to pursue a career in paediatrics was thus ‘bred in the bone,’ or at least the psyche.

Second, I am the grandson of Lithuanian- and Latvian-born Jewish immigrants to South Africa who fled the pogroms of Eastern Europe of the late 1800s and very early 1900s. My maternal grandparents, from a shtetl called Plungyan (now Plunge), went to Heilbron in the then Orange Free State, where many of their family members had settled; my paternal grandparents (from Riga) to Ceres in the then Cape of Good Hope. My maternal grandfather, himself without much formal schooling, set the tone for future generations: he believed passionately that education was the most important ticket out of the ghetto, producing two doctors (Blumy Segal 1933 and Max Segal 1938), a lawyer (my mother) and a pharmacist (my aunt) along the way, all at Wits. His demand for a good education for his children was facilitated by the local high school principal, Mr Lamprecht (Lampie), who became something of a legend among the immigrants of the area. His influence on our family was so strong that I distinctly remember his attendance at my grandparents’ 50th wedding anniversary in Johannesburg in the late 1950s: his arrival was almost messianic. Quite frankly, I grew up with the impression that almost everyone we knew came from Plungyan, immigrated to Heilbron and had experienced the aura of Lampie. There was clearly imprinting of this commitment to education in certain members of our family: my brother, Alan graduated from Wits Medical School in 1971 and I graduated in 1973, both having completed a BSc (Med) along the way.

Third, a chance conversation in the corridors of Baragwanath Hospital in 1972 opened up interesting possibilities. David (Dave) Coombs, then a surgical registrar at Baragwanath Hospital (and in 1974 my senior registrar in Professor ‘Sonny’ du Plessis’ ward at the Johannesburg General Hospital) asked me what I was doing for my fifth year elective. When I said paediatrics, he asked: “At the Hospital for Sick Children in London or Toronto?” Great Ormond Street in London was known to me but what about the one in Toronto? It is, he said, the biggest and best children’s hospital in the world! What a great idea: my brother was an intern in the USA, Pierre Trudeau was the Prime Minister of Canada and a proponent of liberal politics, Canada was intriguing and I was adventurous. Plus I needed a break from the ever-increasing strictures of apartheid South Africa. Little did I know where such an experience would lead.

THE ‘LUCKY’ ELECTIVE

I spent the last 10 weeks of 1972 in Toronto at SickKids as it is colloquially known, learning paediatrics, making new friends, exploring a new environment, simply reveling in the freedoms afforded: free to interact with colleagues from around the world, free to walk the city streets unafraid at any time of the day or night, free to care for patients independent of race, or other designation. A few Witsies in Toronto at the time contributed to the richness of this experience: Moshe Ipp was a junior resident, Mark Greenberg...
an oncology fellow, and Antony (Tony) Olinsky, a research fellow in neonatology. On one of my three rotations during the elective, paediatric endocrinology, I found a phenomenal role model, mentor and supporter in Robert (Bob) Ehrlich.

By the end of the elective, I knew I wanted to return to SickKids and the University of Toronto (UofT) to train as a paediatrician, and specifically as a paediatric endocrinologist, and knew Toronto would be a great place to live. Fortunately, my academic record met the bar for acceptance as a junior resident following 18 months of internship at the Johannesburg General and Transvaal Memorial Children’s Hospitals. So in late June 1975, accompanied by my pregnant wife, Meredyth, and 11 month-old son, Nick, we left Johannesburg for Toronto.

The residency in paediatrics was pretty arduous: in-house on call one night in three, every third weekend from Saturday morning to Monday evening, caring for very sick children. The pay was meager ($11,500 pa to start). But the house staff, from every corner of the globe, was up to the task. More than 35 years later I still maintain contact with a number of my fellow residents and count some among my closest friends. SickKids was everything Dave Coombs predicted it would be: very big and very good.

In 1977 I started as a fellow in paediatric endocrinology. I had no doubt that this was the subspecialty in which I belonged. Professor Harry Seftel at Wits had ignited an intense interest in diabetes, John Hansen and Peter Thompson among others encouraged the focus in paediatrics, and Bob Ehrlich in Toronto mentored and encouraged me in this direction. So much so that he recommended that I go to the University of Pittsburgh and the Children’s Hospital of Pittsburgh to complete my training with Allan Drash, the North American leader in the field. That is exactly what I did and am eternally grateful to both Bob and Allan for their unwavering support, mentorship, collaboration and friendship. Pittsburgh was a good choice from a family point of view, since my wife was able to complete her doctorate in cognitive psychology at Carnegie Mellon University, one of the leading institutions in the world in this field.

At the end of three years of training in Pittsburgh and with rich clinical research experience under my belt, Meredyth and I were faced with a choice among a number of positions in the USA and Canada. We opted to return to Toronto, me to the UofT and SickKids, Meredyth to the nearby University of Waterloo, then UofT. I came back in 1981 and have remained in the same place throughout my academic career. Although in the USA movement of faculty between institutions is commonplace, such is not the case in Canada.

FINALLY, A FACULTY MEMBER

Reflecting back, there are some specific reasons why I was ready to start as a staff endocrinologist at SickKids, and as an Assistant Professor at the UofT. First, I had done the time: seven-and-a-half years of postgraduate training was significantly more than most North American graduates were doing, but not at all atypical for international medical graduates who were seeking academic careers in North America. Second, I had trained in three outstanding places: a solid foundation in clinical medicine at Wits, general paediatrics at SickKids and UofT, and paediatric endocrinology here and in Pittsburgh. A medical degree from Wits was exceedingly highly respected throughout North America. Third, quite frankly, there were only a small handful of academically trained subspecialists seeking careers, and jobs were increasingly available for those best trained. Fourth, I had done clinical research in Pittsburgh that was highly relevant to the field of childhood diabetes: validation and analysis of the HbA1c and C-peptide assays; analysis of early self-blood glucose monitoring in paediatrics, and an early foray into behavioural interventions. This led to oral presentations at national and international meetings, about 12 papers published during training, and the support of my mentors when it came time to apply for positions. The careful choice of mentors and their ongoing support are two essentials when embarking on an academic career. To understand the mentor-mentee relationship, I would refer everyone to Frank Oski’s brilliant presidential address to the Society for Pediatric Research in 1978.1

The decision to return to Toronto on completing my fellowship was one I will not ever regret. SickKids and UofT have been my academic homes for nearly 35 years and have offered me opportunities for personal and professional advancement that I had not even dreamed of as a 17 year-old entering Wits Medical School in 1967.

The milestones of my career are quite typical of most of those entering academic medicine.
A colleague and I wrote about these a few years ago, starting with the ‘nervous novice’ phase in which I felt that it was only a matter of time before my colleagues would discover just how little I knew (the classic ‘imposter syndrome’). I progressed quite quickly to the ‘gung ho’ phase, was promoted to Associate Professor, joined innumerable local, national and international committees, collaborated widely and settled in for the long haul. After about 12 years on faculty, I was promoted to full professor at the UofT, and appointed Head of the Division of Endocrinology at SickKids. This opened even more doors, including leadership positions in the Canadian Diabetes Association, the International Society for Pediatric and Adolescent Diabetes, and first President of the Canadian Paediatric Endocrine Group. Time to move from the ‘gung ho’ to ‘self-respect’ phase.

The trajectory of my career seemed to have reached a peak in about 2006: full professor, division head, over 200 peer-reviewed publications, invitations around the world. What next? Well, the Chair of Paediatrics at UofT and Paediatrician-in-Chief at SickKids (a combined position) reached the end of his 10 year tenure, the limit allowed for these positions. I had long wondered whether this would be a natural next step for me, but had turned down offers to apply for similar positions that would have required a family move from Toronto. I submitted my curriculum vitae and, after a wide search, was offered the position.

On reflection, I think three factors played major roles in being considered a credible candidate for such a prestigious position. First, and without doubt the core to establishment of an academic career, was clinical credibility. This requires tremendously hard work, keeping up with the literature, establishing relationships with colleagues, and, more especially the children and their families for whom I provided care. This remains a remarkably rewarding part of my academic life. I am enormously grateful to the children and families who let me into their lives. They have taught me endless lessons in health care, communication, professionalism, compassion and humanity. The pursuit of clinical excellence ought to be inherent in the careers of all academic physicians.

Second, was the combination of education and mentorship: ensuring the next generation of physicians, paediatricians and paediatric subspecialists were superbly well trained. In academic medicine, one is always surrounded by learners AND one is always a learner. What a joy to be surrounded by smart men and women at all stages of their careers, and in all health care professions.

Third, and an imperative at academic institutions, is studying aspects of the etiology, course and complications of the diseases one treats, at a basic or clinical science level. For me, this was a given, i.e. attempting to provide increasingly better evidence-informed care for, in my case, children with type 1 diabetes. Again this led to remarkably meaningful and productive collaborations, and opened avenues of investigation not obvious at first glance. And again one is surrounded by exceedingly talented and innovative people.

Once credibility has been established, endless opportunities present themselves: opportunities to collaborate in international studies, do teaching in various places, join national and international societies, participate in guideline development, and much more. The attainment of academic credibility (inevitably the harvest of hard work) has another benefit: acceptance into the world of scholars in one’s field, in my case paediatric diabetes. This led to collaborations and friendships with colleagues around the world, and the opportunity to give back in some ways or contribute to a wider mandate: social responsibility.

Along the way, my colleagues nominated me for a number of leadership positions, as well as prestigious awards, locally within our department at UofT, nationally and internationally. Most are significant to me because they encompass all three aspects of academic life: clinical excellence, teaching and research. Three have a special meaning: the lifetime achievement awards of the International Society for Pediatric and Adolescent Diabetes (2010) and the Canadian Diabetes Association (2013). Also, on 10 December 2013 I received a DSc (Med) from Wits for my thesis: Understanding the early course and complications of type 1 diabetes in children and adolescents.

PERSPECTIVE

On 1 July 2015 I will enter the final year of my ten year appointment as Department Chair. How have I done? Well, that is for others to decide and time to determine. During these years, we have hired more than 85 new faculty members from Canada and abroad, measurably improved the safety and quality
of patient care, trained hundreds of paediatricians and paediatric subspecialists from around the world, and remained in the top three departments of paediatrics in North America with respect to research productivity. Interestingly, of my three Associate Chairs, one, Rayfel Schneider is a Wits graduate, and one, Jeremy Friedman, is from UCT: they were the most qualified for these positions.

I would like to reflect on two aspects: what experiences I had had that prepared me to be a candidate for such a prestigious position, and what lessons I have learned and continue to learn as a medical leader.

GETTING THERE

Were there any early experiences in leadership that had an impact? The high school I attended, King Edward VII or KES, placed sports prowess above academic achievement in nurturing student leaders. And what about the weekly military exercise called Cadets? (That this continues in many schools beyond the end of the apartheid-era is beyond my comprehension.)

While I do not much regard myself as an Old Edwardian, having been to KES, I am forever willingly and proudly branded a Witsie: I spent eight-and-a-half glorious years in and around Wits (six as a medical student, one as a science student, graduating with a BSc (Med) in 1969, MBCh (cum laude) in 1973, and 18 months as an intern and senior house officer in the Wits teaching hospitals). Wits welcomed me, and I welcomed the opportunities it provided. Little did I understand at the time that certain experiences at Wits Medical School would serve as the foundation stones for leadership development. Two of these experiences warrant mention.

In 1969 as a BSc (Med) student I became involved with the Association of Medical Students of South Africa (AMSSA), serving on its leadership group for two of the next three years. AMSSA was the last multiracial students’ organisation, and brought together students from Wits, UCT and University of Natal. The meetings were a hotbed of political debate: a real eye-opener for a naïve 19 year old. Meeting and socialising with students from across the country, with diverse backgrounds, provided impetus to work for change.

Delegates to the 1970 AMSSA meeting in Durban. I am seated 7th from the left, second row from the front.
Second, was the development with two colleagues, Julian Judelman and Adrian Grek, of an activist newsletter in medical education, *New Perspective*. In it we challenged conventional wisdoms regarding medical education and brought new ideas to old issues. Some of the issues we raised brought us into direct conflict with the powers that be. Nonetheless, it proved to be quite an effective vehicle for change. Unfortunately, *New Perspective* lasted only a couple of years after we graduated and is now just a tiny footnote in Wits Medical School’s history.

I am not sure that I can pinpoint specific events during my specialty training that steered me or others into leadership directions. It was clear, however, that in order to succeed, one had to build both credibility and accomplishment. After all, there can be no doubt that the “best predictor of future behaviour is past behaviour.” So in order for one’s mentors and peers to take one seriously in the long run, current performance was an essential.

In my estimation, successful academic careers are built on a foundation of content knowledge plus methodological skills, whether in clinical or basic science research. The firmer the foundation, the more that sustainability is built firmly into the mix. One additional ingredient is resilience, something that is not easily taught, and, rather, may be an innate characteristic.

As a junior faculty member, the organisation which gave me a start in leadership was the Canadian Diabetes Association, starting on their Education Committee, and about a decade later becoming Chair of the Clinical and Scientific Section. This led to leadership in the first Canadian Diabetes Clinical Practice Guidelines as well as the first evidence-based guidelines. Furthermore, in the early 1990s, I was the driving force behind the development of the Network of Ontario Paediatric Diabetes Programs, which ensured and continues to ensure excellent care for all of the children in Ontario with diabetes.

The second organisation, the Canadian Paediatric Endocrinology Group (CPEG) was formed as a result of a number of us advocating for the joining together of those paediatric endocrinologists in Canada predominantly involved in growth hormone therapy and those involved in diabetes. I was first President of the fledgling CPEG, an organisation which continues to grow and flourish.

The other organisations that warrant mention are the Hvidore International Study Group for Childhood Diabetes (Hvidore Group) and the International Society for Pediatric and Adolescent Diabetes (ISPAD), since both opened doors for international collaborations that have proved exceedingly meaningful. The Hvidore Group was formed in the mid-1990s and consisted of just over 20 individuals from prominent paediatric diabetes centres around the world, who gathered once or twice a year to develop protocols to benchmark childhood diabetes care in their centres. This group soon became an intensely close-knit team, which has had a major impact on diabetes care worldwide as did many of its individual members. The friendships developed across many country boundaries have been an exciting off-shoot of this enterprise.

Joining ISPAD, becoming an Executive member, then President for two years at the time of its major transformation into a serious international organisation, has also been a career highlight and training ground for leadership development. It is one thing to visit many places around the globe for medical conferences, another altogether to be introduced to these places by locals with whom one has developed a conjoined sense of purpose.

Probably the most fertile ground for leadership development has been my home academic environment, SickKids and UofT. Becoming Head of the Division of Endocrinology, meant joining the team of Division Heads in our department and working closely with two highly accomplished department chairs, Robert (Bob) Haslam and Hugh O’Brodovich. Then, joining numerous committees opened exciting new experiences, none more so than the Faculty of Medicine’s Decanal Promotions’ Committee (I was a member for 7 years, the last three as Chair of the committee) which adjudicates all faculty promotions. During this time I got to see the accomplishments of hundreds of my faculty colleagues, as well as to interact with all the department chairs. What is self-evident is that accomplishment as well as leadership comes in many different shapes and sizes. Most particularly I was able to see which styles worked and which did not, and of those that worked which fitted my personal philosophies.
Thus, when the positions of Chair at UofT and Chief at SickKids were posted, I felt ready to be a candidate.

Another exceedingly important lesson learned along the way was that as a leader I did not have to provide care to each and every single patient, but rather to ensure that outstanding systems and people were in place to do this. Nor did one have to do every teaching session, mentor every trainee, and so forth.

**BEING THERE**

When I accepted the job as Chair/Chief, I asked my two ‘bosses,’ the Dean of the Faculty of Medicine and the Hospital CEO, whether I should enroll in a leadership course. Both said no, rather read widely, watch others, and ask questions. I questioned my colleagues in the Paediatric Chairs of Canada (PCC) group about innumerable issues, and found that these issues were pretty well universal.

Along the way there have been opportunities for attending short courses in leadership, both through our departmental leadership program, or at annual meetings of PCC, where one day is set aside for a facilitated leadership seminar. I do not respond to those presenters who appear to have all the answers, much more so to those who understand the nature of the questions at hand.

As I see it, I play three roles: developing student and faculty, ensuring excellence in all three pillars of academia, i.e. clinical care, education and research, and responsibility for the financial health of our department. In approaching all leadership positions that I have had, I have tried to live by a number of simple and self-imposed rules: first and foremost is to have a set of basic principles which are not negotiable, or varied according to individual context. These include fairness, transparency, forthrightness, and avoidance of favouritism. Second, is to set very high standards: a recent potential recruit withdrew his application because he said he was overawed by our academic expectations. My response was one of significant satisfaction that at least our expectations for academic accomplishment were known to be of the highest order. Third, is, wherever possible, to recruit people who are ‘smarter than oneself,’ and not be threatened by their achievements. Finally, as Chief/Chair it should always be about ‘us,’ never about ‘me’!

Early on in my tenure, I heard the then head of Disney, Michael Eisner, talk about leadership. He said two things that rang very true: sweat the small stuff and have at least one very close confidante by whom you can run all new ideas which means that all ideas are thoroughly evaluated before being put into action.

I once heard a talk by Henry Mintzberg, the brilliant McGill Professor, who is the ‘anti-management’ guru. He talked about the risks of treating public institutions such as hospitals and universities like big corporations. I heartily agree with his differentiation of leadership and management, and his disdain for applying the often pop-psychology of corporations to our public institutions.

Nelson Mandela, in *The Long Walk to Freedom*, talks of two methods of leadership: the majority of the time being the shepherd helping keep the flock moving forward to meet the ambitious vision and mission we have developed; the second, only used when one is certain of the direction needed and the way to get there, is by pulling the flock forward with you, being wary of getting too far ahead and losing them. There were other principles by which Mandela led, including keeping the enemy close, knowing his/her favorite sport, and not being scared to show fear.

What happens to the major academic elements of one’s own career, particularly research, when one becomes a Department Chair/Chief? Despite significant attempts, often life is just too busy to manage everything. Rather than being the shining light in research oneself, the role of the Chair is to train the light on younger faculty members by supporting their careers.

Finally, being Department Chair/Chief has allowed me to help focus our department’s attention on ‘social pediatrics,’ that is, ensuring the best outcomes for the disadvantaged children in our societies and their families. This has occurred through the organisation of medical student and resident electives, summer studentships, global child health research and clinical activities, and by mobilising the PCC behind this endeavour. In the process, I have learned a great deal about how child health and well-being struggles to find its place in the
forefront of medical and social agendas. It needs a holistic approach to improving maternal health, early childhood experiences and societal challenges to ensure that the full potential of our next generations is realized.

ACKNOWLEDGMENTS

What would I do if I had to start all over again? The answer is simple: with some minor variations, essentially the same. This continues to be an astonishingly rewarding career. Why do I use the word astonishing: well, I worried that taking on such a leadership position would be isolating and insular, shutting me off from the three sustaining pillars of clinical care, education and research. Nothing could be further from the truth: although more restricted, I still manage to incorporate some of each pillar into a busy schedule of hospital and university affairs. The two aspects of my position that are most rewarding are: the nurturing of young faculty, and the development of ever improving systems for delivery of those three pillars. But one does not do these things alone: academic medicine is indeed an intensely team sport, members of the team include one’s ‘bosses,’ the UofT Dean and hospital CEO, and their administrative groups, one’s own departmental leadership team, and all its members. Within that team there is a strong sense of cooperation.

My family is a tremendous source of support: my wife, Meredyth, has pursued a highly successful career as an academic cognitive psychologist; and our two sons have been bitten by the academic bug: Nick is an Assistant Professor in Internal Medicine and an Infectious Disease clinical epidemiologist at UofT and Sunnybrook Health Science Centre, and Rich, an Assistant Professor of Pharmacology and Neuroscience at University of California, San Diego. The baton has been passed.

When I received my DSc (Med) from Wits in December 2013, on the very same day as the memorial to Nelson Mandela, the then Acting Dean of the Faculty of Medicine, Sharon Fonn, in a beautifully written citation, said simply “… and his origins are here at Wits!” (Photo 2). That phrase describes me perfectly: I owe Wits a life-long debt of gratitude for an educational opportunity that has served me for my entire career. Wits helped shape me long after I had completed my formal education: Once a Witsie ...

REFERENCES

From the Curator’s Desk:  
Into the future: change and continuity

Luvuyo Dondolo

The Adler Museum of Medicine has a well established reputation within the Wits Faculty of Health Sciences and the broader University community. It has branded and strategically positioned itself within the Faculty, particularly with regard to pedagogy and research. Because of its collection, library and archive, over the past years the Museum has attracted a number of researchers. The Museum has in the main been inward looking – establishing and positioning itself in the Faculty, in terms of teaching. This inward looking development has been a valuable part of the history of the Museum and has been one of great contributions of the previous Curator. This foundation has secured the position of the Museum in the life of the Faculty and will help me build its future trajectory.

The inward looking and services approach needs to be complemented by a comprehensive and meaningful outward looking approach. This redefinition, recoding and positioning will, among other things, attract new audiences to the Museum and address politics of inclusion and exclusion, access, representation and presentation. The future trajectory of the Adler Museum of Medicine is based on positioning it as a knowledge hub and a system of knowledge for diverse audiences at different levels. This will facilitate the Adler Museum becoming one of the leading museums in the world that preserve and conserve the history of medicine/health sciences. In this manner, the Museum will shape and inform the civil citizens (visitors) in a particular way. This future trajectory is underpinned by the notion of change and continuity. This approach will make the Museum a contact zone, a space of intellectual engagement, a space of public discourse, a source of information for diverse audiences.

Over the past decades, the Adler Museum of Medicine has evolved. The aforementioned achievements to date are a product of its development and the shape it has taken over the years. This historical evolution is epitomized by different interventions that characterize its various curators at different historical periods. These range from establishing the Museum, creating Museum’s systems and procedures and striving towards sound collection management to establish and position the Museum within the Faculty of Health Sciences and the University community. These indicators point to the focus area/s of each curator at different times of its development as determined by the needs and the prevailing circumstances.

ADLER MUSEUM OF MEDICINE EXHIBITION COMPLEX

The term ‘exhibition complex’ is borrowed from Tony Bennett (1995), who used it in reference to the “Great Exhibition of 1851” that transformed museums from simple, private spaces, cabinets of curiosity, to complex, more public and open spaces. Prior to the mid-19th century, the institutional nature of museums and exhibitions was based on class, as they were spaces that were visited only by the aristocracy. This means that before the mid-19th century, particularly before this exhibition, museums were private spaces, cabinets of curiosity, not public spaces. The “Great Exhibition of 1851” caused a shift in as far as the institutional nature of museums and their exhibitions were concerned. This exhibition, which was not based on class, displayed the products and the industrial equipment that caused the working class to become subjects, not objects, of the exhibition.

In this article, the term is used in relation to the images and gazes that a visitor encounters at the Adler Museum of Medicine and represents its master narrative. The key gazes of the Museum include the “Highlights of western medicine” display. This exhibition presents the overview of the evolution of “western” medicine within the context of three indicators. These are treatment, knowledge and disease. This three dimensional interpretation framework of the medicine geography as demonstrated hereunder presents key points in the history of medicine.

There are multidimensional approaches that can be used to interpret and present the history of medicine. These include a Marxist approach which is class-based in its interpretation, a social history approach which focuses on triangulation approach: social, economic and political contexts a gender approach.
which is gender-based in its interpretation, and a medicinal approach which focuses mainly on the evolution of medicine. These approaches to the interpretation of the history of medicine have their own challenges and the Museum opted for the latter approach - a medicinal approach that focuses mainly on the evolution of medicine - as illustrated in Figure 1.

This display is also important because it is the starting point for the Museum’s guided tours and introduces the master narrative. It lays the base for the subsequent displays which focus on different themes/topics of medicine/health sciences. The politics and poetics of purity, regionalism and naming/terminology manifest themselves in this permanent exhibition. For instance, the term ‘western’ medicine, which has regional undertones, is exclusive and gives a perception that there is something purely ‘western’. The term is loaded, politically and epistemologically and more complex than it might seem. The presentation of the ‘western’ medicine geography is pretexted on racial, regional and superiority knowledge production with its subtext of ‘us’ and ‘them’ which was a common feature of colonial and apartheid discourse.

From this exhibition, the visitor then moves to the microscopes display. The exhibition presents the development of microscopes and the changes they have undergone over centuries to the most recent and technological advanced ones. Microscopes have been central in the evolution of medicine.

Another key image of the Museum is the HIV/AIDS exhibition entitled “Confronting HIV/AIDS”. It gives an overview of HIV/AIDS as a virus, its sociology, development and key highlights nationally and internationally. This informative display is viewed by various visitors and seems to be appealing to nursing and medical students. The exhibition, however, presents a racialized narrative of the epidemic as it is portrayed as a black people’s virus. Correctly so, statistically there is a high number of black people with HIV/AIDS. But South Africans across the colour line have been diagnosed with it and ought to be presented as such. This exhibition’s narrative - which in line with the dominant homogenous and monolithic master narrative of HIV/AIDS in South Africa - perception and view about Africans’ sexual behaviour and them as the carriers of HIV/AIDS, is trapped in the politics and tensions of presentation, display and staging. As
part of this exhibition, a timeline has been used to depict the key highlights of HIV/AIDS not only in South Africa but throughout the world.

From this exhibition, the visitor moves towards the back of the Museum where an “Alternative Medicine Exhibition” is displayed. It is made up of some aspects of medicine from various groups of people. These include the African Herb Shop, Abu Ali Al-Husain Ibn Aboallah Sina (Avicenna) (Figure 2), Scientific Medicine, Chinese Traditional Medicine, Ayurveda, Unani/Tibb Medicine, Tara Rokpa: Traditional Tibetan Medicine, Western Herbal Medicine, Homeopathy, South African Traditional Healing and Those whom the ancestors have called: Traditional healing in southern Africa (Figure 3).

Just as in the case of the exhibition entitled “Highlights of western medicine”, the term “alternative” is complex with many meanings, connotations and possible interpretations. The questions arise: alternative for whom? alternative from what? Is it incidental that the “Alternative Medicine Exhibition” is displayed at the back in terms of the Museum space and layout or has it to do with the long racial history of space allocation in public places which was experienced in South Africa and in countries like the United States of America? Most recently, information that was released by Statistics South Africa and the World Health Organization revealed that a high number of South Africans consult so-called ‘traditional healers/isangoma’ regularly, even though South Africa is perceived to be modern and ‘western’. According to Coombes: “Past policies also resulted in the banning of traditional medicine, despite the fact that over 80% of South Africans depend upon traditional herbal remedies for their primary health care”. This view is also shared by Ilse Truter as she pointed out that: “It is estimated that 70% to 80% of the population in Africa makes use of traditional medicine. Also in South Africa, it is estimated that between 60% and 80% of people consult a traditional healer before going to a primary health care practitioner. Furthermore, African traditional healing is intertwined with cultural and religious beliefs, and is holistic in nature. It does not focus only on the physical condition, but also on the psychological, spiritual and social aspects of individuals, families and communities”. This article is not intended to enter the debate about the regular use of traditional healers as against primary health care, but to illustrate the complexity of the term ‘alternative’ in the African context.

If this is the case, is that an ‘alternative’ or do people use both depending on their preferences or what they deem appropriate at a particular time,
depending on their circumstances and the nature of their illness? The term, therefore, is not merely complex with different meanings but may also be misleading.

Furthermore, the politics of layout or location manifest in the exhibition’s location at the back of the Museum which makes it an alternative from the western medicine exhibition. The dominance of western medicine is implicit both in the exhibition and in terms of space and location. Based on the aforementioned pointers this exhibition is what I would term the “modern ethnographic gazes”. The alternative medicine narrative includes a display about Isangoma. The exhibition depicts the practice according to its informant, the late Mr Maseko. A contrast between this display and the medical doctor one is that to be a medical doctor is a career while to be Isangoma is a calling as not everyone can be one, only those who have been called by the ancestors and/or possess supernatural gifts.

The “Those whom the ancestors have called: traditional healing in southern Africa” exhibition presents the process isangoma undergo for training and there is a reconstructed consultation room. The display attempts to be balanced, however, the reconstructed consultation room and the contextual framework trigger questions. These range from lack of provision of interpretation of most displayed objects which have meaning and value; dress code and colours and patterns of beads; to the sociology of isangoma as a practice. In addition, the above discussed images of the Museum, particularly the “Alternative Medicine Exhibition” and isangoma display also demonstrate pitfalls of an add-on approach that is mostly seen as the easy way to show change and transformation without a transformative conceptual framework.

In between the “Alternative Medicine Exhibition” and “Traditional healing” exhibition there is an exhibition entitled “Poliomyelitis – The Dread of Yesteryear”. It projects the history of poliomyelitis and the equipment that was used, and the developments associated with it.

The last key images for visitors is based on the two reconstructed consultation rooms – a doctor and an optometrist, and lastly, a reconstructed pharmacy.

These visitor gazes are complemented by temporary exhibitions and outside displays in the foyer of the Faculty of Health Sciences building, and education programmes for mainly health sciences students and learners of different age groups. All these constitute the master narrative of the Museum which is premised at safeguarding – conserve, preserve, research, present and manage the history and heritage of medicine/health sciences.

To date, a lot of work has been done in as far as the Museum exhibition complex is concerned. However, there is a need to widen the audiences, to coherently and comprehensively serve all its “imagined communities” and to address the
politics of display and presentation. The rationale for the Museum to focus more on serving the University community is understandable but this is inward looking and needs to be complemented by an outward looking (i.e. outreach programme, awareness days, mobile museum etc.) that considers other members of its communities that are not based at the University. We need to showcase balanced gazes and engage in outreach programmes, particularly a mobile museum, that targets the previously economically marginalized communities, appealing to learners especially. This will assist in redefining and repositioning the Museum in relation to its appeal in diverse communities and its contribution to social transformation in post-apartheid South Africa.

This past, present and future contextual framework informs the notion of change and continuity at the Adler Museum of Medicine. Changes relate to the vision, philosophy, approach and conceptual framework while continuity applies to what is deemed to be significant to be carried over to the present and the future.

THE MUSEUM’S FUTURE TRAJECTORY

My vision for the Adler Museum of Medicine is for it to become a knowledge hub for learning, teaching and research for diverse audiences, and be one of the leading museums that collect, preserve, exhibit and disseminate information about the history and heritage of medicine/health sciences in the world by 2020.
The concept of a knowledge hub depends on its fundamentals. An effective knowledge hub involves people, process and infrastructure (technology, displayed and not displayed information or collection etc.). Knowledge is a fluid mix of framed experience, values, contextual information and expert insight that provides a framework for evaluating and incorporating new experiences and information. It is in this context that knowledge is intrinsically linked to human thought and experience (the museum visitor’s experience).

Furthermore, there are two types of knowledge. These are: (i) Tacit Knowledge which refers to internal information, thought processes, experiences and accumulated knowledge that is held within the minds of individuals (‘soft’ knowledge); and (ii) Explicit Knowledge that refers to codified information such as exhibitions, books, documents, journals, legislation, visual and audio recordings, digital text, email and internet.6

All these ingredients will assist in positioning the Museum as the knowledge hub, a system of knowledge and a space of interaction, public discourse and conversation. This knowledge is produced in multidimensional ways like displays, non-displayed collection, museum tours, education programmes, and library and archives.

The Museum through its systems of knowledge will gather, generate and disseminate knowledge about the history and heritage of health sciences for diverse audiences. The strategic pillars of the knowledge hub with its sources of knowledge include: infrastructure (displays, collection), governance, library and archives, and learning and sharing (and research). Through this system of knowledge the Museum will be one of the leading museums that preserve, conserve and showcase the history and heritage of health sciences.

The key elements in the aspiration of becoming a world class museum, preserving, conserving and showcasing the heritage of medicine include:

- quality of the visitor experience;
- fulfilment of the educational mandate;
- deepening social consciousness;
- institutional reputation (through excellent, balanced and quality exhibitions and publications);
- effective management of priorities and achievements;
- diverse staff of high calibre and a broad range of skills;
- good governance;
- sound collections management ensuring a wide scope and excellent quality;
- scholarship which enhances public discourse.

The Adler Museum knowledge hub will mirror the University’s vision and mission commitment to becoming a “Leading research-intensive university, intellectual excellence, international and national competitiveness and local relevance.” This hub must also function as a space of engagement, dialogue and interaction for different segments of its diverse communities, advancing social engagement.

The future of the Adler Museum of Medicine will encapsulate meaningful and comprehensive inclusion of the ‘other’ through presentation, interpretation, and representation. It hopes to take transformation beyond staffing equity and add-on exhibitions through to content and context changes. This promotion of change will have a clear transformation conceptual framework, objectives and measurable targets.

Coombes in her book entitled History after Apartheid: Visual Culture and Public Memory in
a Democratic South Africa, particularly a chapter entitled New Histories for Old: Museological Strategies, identified certain museums to highlight the need for transformation, particularly with regard to their exhibitions and images positioning in the present (need to be inclusive). The exhibitions of the institutions she identified and institutions themselves attempted to address the issue of historical imbalances. However, Coombes fails to show or understand that the democratisation of museums she identified is hampered by the approach underpinning their exhibitions which is an add-on approach. It is imperative to consider the form and shape the democratisation of museums take. If not taken into account, this might undermine and devalue the initiatives and programmes aimed at redressing historical imbalances. Thus, there is an element of denial, convenient amnesia and production of “modern ethnographic gazes” about certain aspects of culture, heritage and history.

The term ‘transformation’ is used here to denote fundamental changes in the structures, institutional arrangements, policies, modes of operation and relationships within the museum. Transformation of our society calls for its re-orientation from the past values and practices defined by racism, sexism, inequality and lack of respect for human rights towards the values reflected in our national constitution.

The above presented Adler Museum of Medicine Exhibition Complex has made efforts to be inclusive and representative. However, there is still a need for a more transformed museum space with a clear approach and conceptual framework. This will address politics of display, presentation, interpretation, space and location. The transformation of museums and their practises ought to entail a complete alteration in both form and substance; and a successful transformation would be typified by the antithesis of the conceptual framework of the current Adler Museum of Medicine exhibition complex.

CONCLUSION

This article critically examined and depicted the current state of the Adler Museum of Medicine through a reflection on its exhibition complex within a context of a space in transition and at the crossroads. The crossroads at which the Museum is at is made up of establishing, positioning and relevancy of the Museum in the Faculty of Health Sciences, serving its off-campus communities (outward looking), social consciousness through a balanced exhibition complex, and meaningful and comprehensive transformation. It also highlighted the dilemma, challenges and politics of space layout and design, display, representation and presentation, dialectics of transformation, tensions and contradictions that manifest at this space in transition and at crossroads.

It also moved into the future through continuity and change concept. This space in transition and crossroads needs to move away from demarcated aspects of heritage and displays, modern ethnographic gazes, and add-on approach as a transformative conceptual framework towards holistic, balanced, sound and more all-encompassing images and social consciousness. Based on its collection, the Adler Museum of Medicine has social and intellectual capital, and legitimacy which we should use for both inward and outward looking. In transforming as we move forward, this social and intellectual capital, grounded exhibition complex and sound museum services will not only enhance the credibility of the Museum but also become key ingredients of the new era.

REFERENCES

This is a biography about Dr Erika Sutter, a Swiss ophthalmologist who spent 32 years working in Elim Hospital, which is situated in an area that is now known as Limpopo.

Dr Sutter’s life’s work lies in her commitment to social issues, foremost of which were the prevention of blindness and the promotion of community health care and development.

“Her story” is told by a friend, Gertrud Stiehle, who persuaded Erika to confront her past, opening up more personal issues and revealing her interests and motivations. Erika’s previous books were more academic, with an emphasis on the role of others in the community.

The foreword is written by Mamphele Ramphele who describes herself as “fortunate for having encountered this remarkable woman as a colleague, a mentor, a friend and a fellow global citizen”.

The book also includes a chapter by Frances Lund, Associate Professor in the School of Built Environment and Development Studies, University of KwaZulu-Natal.

The book (soft covered and A4 in size) makes easy reading and is illustrated with some wonderful black and white photographs.

Born in Basel, Switzerland in 1917, Erika is one of the last Swiss South Africa Mission fraternal workers to have stayed so long in South Africa.

As her parents encouraged intellectual and cultural ideas, Erika developed a keen sense of social disparities from an early age. She chose a career in natural sciences over social work and theology (her parents were agnostics).

While working in Sweden, Erika committed herself to becoming a missionary, and joined the Swiss Mission in South Africa, taking up the post of a laboratory technician in 1952 at Elim Hospital. Thus in spite of being a botanist, after six months of medical laboratory training, she found herself testing sputum for tuberculosis, urine for bilharzia, stools for other parasites, blood samples for malaria and syphilis. In addition, she was responsible for the performance of all X-Rays.

After a conversation with a superintendent from a neighbouring mission station who commented that: “spending a lifetime working in the laboratory didn’t suit her”, she decided to study medicine.
From 1956 – 1961 she was enrolled as a medical student at Wits University. While pursuing opportunities in Basel to continue training in Obstetrics and Gynaecology, she received a letter asking if she would take over the Elim Eye Hospital. Dr Odette Rosset who had built up the Eye Hospital, wanted to retire along with her husband, Dr Jean Rosset, the Superintendent. As a result Erika underwent specialist training in Switzerland, returning to Elim in 1965 as a fully qualified ophthalmologist.

She worked in an era during which racial segregation had been imposed under colonial rule, and was systemized by laws after 1948. As a community development pioneer she faced the challenges of political engagement and struggles, striving not to let apartheid interfere with her work. The Rev Beyers Naude had a profound influence on her.

Furthermore, she sought to address the issue of patriarchy in the missionary and medical societies.

Three important projects that she established were:

1. Diploma in Ophthalmic Nursing. Erika added a training school in eye care for ophthalmic nurses, within her department at Elim Hospital. A nursing school for Africans, with official accreditation from the South African National Nursing Council, had been in existence at Elim since 1933.

2. The Rivoni Society for the Blind.

3. Care Groups – for which she is the most well known.

Initially she tried to practise the best possible curative medicine as was the norm in a mission hospital, but, motivated by the high incidence of trachoma seen in patients from the area, she embarked on a more community health approach. The essence was to mobilise local women to form groups in which they could spread their newly acquired knowledge about trachoma within their own area. They were visited regularly by a facilitator who had been trained by Erika. These Care Groups are still functional and now include HIV/AIDS in their work.

She remained single all her life, with the suggestion that the care givers provided a surrogate family for her. She battled with depression, dealing with a family history of mental illness, and feelings of neglect by her mother during her childhood.

Brave, dedicated, committed, determined and single minded, she sometimes took risks that made her unpopular. Notably, she has been described as a better team worker than a leader by nature.

Erika retired in 1984 aged 67 years, having lived her life in the service of humanity. She moved back to her hometown of Basel. She is 97 years old now, and in a cruel twist of fate is almost completely blind from glaucoma.
Letter to the Editors

To the Editors

In the Editorial of December 2014, titled Wanted – A launch pad, it was Professor Davies’s opinion that ‘a suitable launch pad for a major health project can only be found within the existing health service’.

The term ‘local leadership’ refers to what I believe is a major factor for improving health services, especially rural services. His 2009 Editorial identified this item: ‘Stronger leadership and greater local accountability’.

In 1977 I joined the Head Office of the Department of Health in the ‘independent’ Transkei, to support the new Secretary, Dr Charles Bikitsha, who had been head-hunted from general practice in the UK. My aim, which he accepted, was to promote primary health care from Head Office. The Department held regular general meetings with the medical superintendents of all hospitals, mostly mission hospitals. The official attitude was that these meetings were for conveying head office policy and requirements. Over time I tried to change it to that of discovering their needs and how to support them. That was when I began to see that health service development should be a bottom-up rather than a top-down process, and that local leadership is the key. The top should enable the bottom rather than try to run it.

At All Saints Hospital, near Ngcobo, we developed a programme for the training of district clinic nurses, reflected in a handbook. When based in Mthatha, I combined the results of such work at All Saints, Rietvlei, St Lucy’s and St Barnabas Hospitals and recommended to the Head of Transkei Nursing Services using such a curriculum to establish a diploma with the Transkei Medical Council. I saw such a process as an example of the positive side of Transkei’s ‘independence’, but saw what happened as an example of ‘top-down’ failure. The said Head preferred to stay in line with RSA’s much less practical Diploma in Community Nursing.

Today development of all kinds dominates our politics, our news, and our thinking. Increasingly, I have been struck by what I shall call ‘the reality gap’ between the level at which so many administrative and executive conferences and meetings of all sorts examine and pronounce on policy matters, and the ‘coalface’ where issues have to be handled.

It was a pleasing coincidence that there arrived, soon after the Editorial I refer to, an SAMJ with Chris Bateman’s article: Honing healthcare leaders’ competence and attitudes equals facility-level delivery. Under his sub-heading The power of one, and appropriate to my point, Bateman reports that the University of Cape Town has recently set up an Academy of Leadership and Management of Health, and that Marilyn Keegan of the Council for Health Services Accreditation Southern Africa (COHSASA) said that even when given standards at hospitals “... but nothing happens ... the missing factor is a good manager or leader”. Anton Le Grange, head of the Foundation for Professional Development, is quoted as saying: “We teach them how to be leaders, what a supervisor is, how to present yourself.” Under his final sub-heading: Leading under ‘conditions of complexity and uncertainty’ he reports that the primary aim of the 5-day Stellenbosch course is to explore, analyse and unpack the advanced topics in current leadership thinking as it applies to the healthcare system.

Local leadership becomes even more critical when government, central or provincial, lacks functionality and fails in the execution of its responsibilities. I recall that Robert Kaplan’s book: The Ends of the Earth: Journey at the Dawn of the 21st Century, published in 1997, is a detailed and prophetic account of his backpacking travels through Africa and the Middle and Far East as he experiences the state of the societies he passes through. Although overpopulation and environmental degradation dominate his conclusions, he has observations relevant to management at the local level under difficult conditions.

Professor Ian Couper of the Centre for Rural Health (CRH) at Wits kindly sent me their Biennial Report (2012-2013). It presents a big range of local and international organisations concerned with rural health: their collaborations and the CRH’s own training and support to regional rural health services. In the Report itself I find this reference to the question of leadership: that in February 2012 CRH hosted a joint workshop, followed by conferences, with Monash University on the development of rural clinical academic leadership.

Which is why I conclude with the suggestion that you invite CRH to make a ‘launch pad’ contribution to the Bulletin, to show, more specifically than their Report allowed, how their own experiences and support of the need for well-defined local leadership overcome the reality gap.

Dr Ronald Ingle
Retired, formerly Superintendent, All Saints Hospital

REFERENCES

Adler Museum Bulletin publishes papers in the field of historical research in medicine and allied health sciences. The Museum welcomes original contributions and letters for publication but reserves the right to edit, abridge, alter or reject any material. Manuscripts should not exceed 5000 words. Longer articles may be divided into parts and published in successive issues of the Bulletin. Authors are responsible for the factual correctness of their articles. All articles are sent for refereeing. Authors wishing to reserve copyright to themselves should stipulate this at the time of submission of a manuscript.

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References are listed at the end of the manuscript and should be indicated in the text by superior numbers and listed at the end of the paper in numerical order. Do not list references alphabetically. References should be set out in the Harvard style, and only approved abbreviations of journal titles should be used. ‘Personal communications’ may be cited in the text, but not in the reference list. However, formal theses and dissertations, even though unpublished, may be listed provided full details are supplied, including the institution where the master copy is lodged. Do not indent or otherwise format each entry. Note that this is a reference list and should not be formatted as footnotes.

Reference examples

Dr Frack had been a member of the 1919 Class, the Tin Templers.¹

It did not, however, include anything about osteology, for bones would have doubled the size of The Pocket Gray.²

Direct quotes should be in italics or in inverted commas

Military medicine, surgery, and nursing were matters too important to be left to private charity, however well intended… .³

“The tenth edition of Aids to Anatomy appeared in 1940…. It had been edited by Professor Stibbe, who, sadly, in 1923 left the University of the Witwatersrand.”⁴

References


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