THE NEW SOMERSET HOSPITAL AS A TEACHING INSTITUTION

J. H. LOUW, CH.M. (CAPE TOWN), F.R.C.S. (ENG.), *Cape Town*

When the New Somerset Hospital opened its doors in August 1862 there was already talk of the establishment of a medical 'Faculty' at the South African College, but many years were to elapse before this would become a reality. Although there is no record of any 'medical apprenticeships' at the New Somerset Hospital, it is of interest to note that its predecessor, Dr. Samuel Bailey's 'Old' Somerset Hospital, was the training ground for at least two Cape practitioners: Jacob Versfeld (1819-) and Henry Bickersteth (1832-) — who were apprenticed to Dr. Bailey. However, in 1888 'permission was granted to embryo medical students to use the wards at a fee of 5 guineas per quarter'.

In 1895 Dr. E. Barnard Fuller joined the staff of the New Somerset Hospital. He is best remembered as one of a small band of men who were responsible for the founding of the Medical School in Cape Town and the man who was the driving force which brought about this great event some years earlier than might have been. He was always a great friend of the students and, from 1911, when the second-year medical chairs were established at the South African College, he used to encourage the medical students in their studies by taking them to the New Somerset Hospital to observe operations.

Soon after the official opening of the new anatomy and physiology laboratories at the College on 6 June 1912, the prospect of further developments in medical education prompted a good deal of discussion. The question of clinical training of medical students became an important issue and the College had to take stock of the existing hospital facilities, or rather lack of facilities, in the Cape Peninsula. In this it had to turn to the newly constituted Cape Hospital Board which on 1 March 1913 was made responsible for the administration of hospitals in the Peninsula.

From the outset the Board was anxious to provide a suitable general hospital to serve the city as a whole, but its first task was to formulate a development scheme aimed at re-arrangement and extension of the existing institutions so as to meet the pressing needs of the community. The following extract from the first annual report of Mr. Polhemus Lyon, first chairman of the Board, on 13 March 1914, gives a clear indication of the Board's attitude towards the establishment of a medical school:

'The proposed school of medicine has occupied the attention of the Board from time to time. It can be stated that the Board never loses sight of this and proposes that every encouragement shall be given toward furthering of this project. The new postmortem room at Somerset has been built and equipped for the convenience of medical students. We recognize that South Africa should have its own medical school, the beginnings of which have been slowly growing at the South African College; and our Somerset Hospital, which has some claim to be spoken of as the National Hospital of the Dominion, would not only prove a desirable field of study for embryo physicians and surgeons, but clinics for medical students conducted by the visiting surgeons and physicians bring into the hospital a spirit of university life which is essential for a high standard of work in a large institution, which evidently is the destiny of the Somerset'.

From that time onwards the Cape Hospital Board continued to cooperate in every way with the College (and the University later on) in this endeavour and became a staunch partner in the development of the Medical School.

During the discussions of 1913 and 1914 between the College and the Hospital Board, the College representatives stressed how important it was for the future of the Medical School to have a large free hospital nearby for clinical training.

The question of using the suburban hospitals entered largely into the matter, but at that time only 4 of the hospitals in the Peninsula were recognized by the Colonial Medical Council under the regulations as training schools for *general nursing*, viz. New Somerset, Woodstock, Rondebosch and Mowbray Cottage, and Victoria hospitals. Of these, the New Somerset Hospital was the only one large enough and close enough to the College for consideration as a training school for medical students. Eyes turned to the City Infectious Diseases Hospital (established in 1899), next to and rather better than the New Somerset, and to the Robben Island Leper and Lunatic Asylum, which was almost on a lordly scale, but medical students required more for their training than an intensive study of fevers, lepers and lunatics!

The New Somerset Hospital, therefore, just had to be good enough for a start. When this sprawling, two-storied structure, turreted at all corners and looking more like a mediaeval keep than a hospital, was opened in 1862, its bed accommodation was 100. This soon proved inadequate and additions and extensions had to be made from time to time to meet the demands. By 1914 the beddage had increased to 231, but the hospital was still overcrowded, poorly equipped and in many ways wholly unsuited for clinical instruction. New it had been in Florence Nightingale's pioneer days, but it was now old, inadequate, and out of date. However, it could at least boast of electric lighting, reasonable nurses' quarters and a new operating theatre, and in 1915 the City of Cape Town acquired its first ambulance to convey patients to the hospital! Moreover, the Cape Hospital Board, conscious of the numerous deficiencies, was planning to build 'year by year certain three-storey pavilions because, with the Medical School in view, the unequalled position of the Somerset must be used for the development of a great hospital'. This was no idle chatter, and the Board set about fulfilling its obligations as funds became available.

In the first annual report of the Board for the period 1913/1914 the chairman indicated that the building of a new ophthalmic and aural diseases pavilion to accommodate 32 patients would be started forthwith, and suggested that pavilions for children, maternity patients and mentally disordered patients at the Somerset might follow. The Shipley Pavilion for eye, ear and throat patients was formally opened on 15 August 1916 by the Administrator, Sir Frederic de Waal, and in the same year a new X-ray installation at the Somerset was inaugurated.

On 26 September 1917, the Board adopted the principle that the professors of pathology, pharmacology and

bacteriology, appointed to the staff of the new University of Cape Town, should be appointed *ex officio* members of the medical staff of Somerset Hospital. In accordance with this decision the following appointments were made: Prof. W. B. M. Martin as honorary pathologist, Prof. T. J. Mackie as honorary bacteriologist, and Prof. A. Clarke as honorary pharmacologist.

THE FIRST DECADE — 1918 - 1928

Early in 1918, following upon representations made by the University, the Board agreed to admit third-year medical students to the practice of the Somerset Hospital at a fee of 10 guineas for a 'perpetual ticket' or 6 guineas *per annum*.

Teaching of 'third-year' subjects was commenced in 1918, and from the middle of that year students attended the New Somerset Hospital for the first time, mainly for post-mortems. (The Hospital Board decided to charge them only 3 guineas instead of the full annual fee of 6 guineas for that year!)

In 1919 the Board was approached by the University with the request that facilities should be placed at the disposal of the clinical professors for practical teaching at the Somerset Hospital (and the Peninsula Maternity Hospital). The University also submitted a proposal to appoint for 1919 part-time clinical lecturers from among the honorary visiting staff of the Somerset Hospital. The Board agreed to these proposals and also to the appointment of the dispenser at the Somerset Hospital in the department of pharmacology of the University during the year 1919.

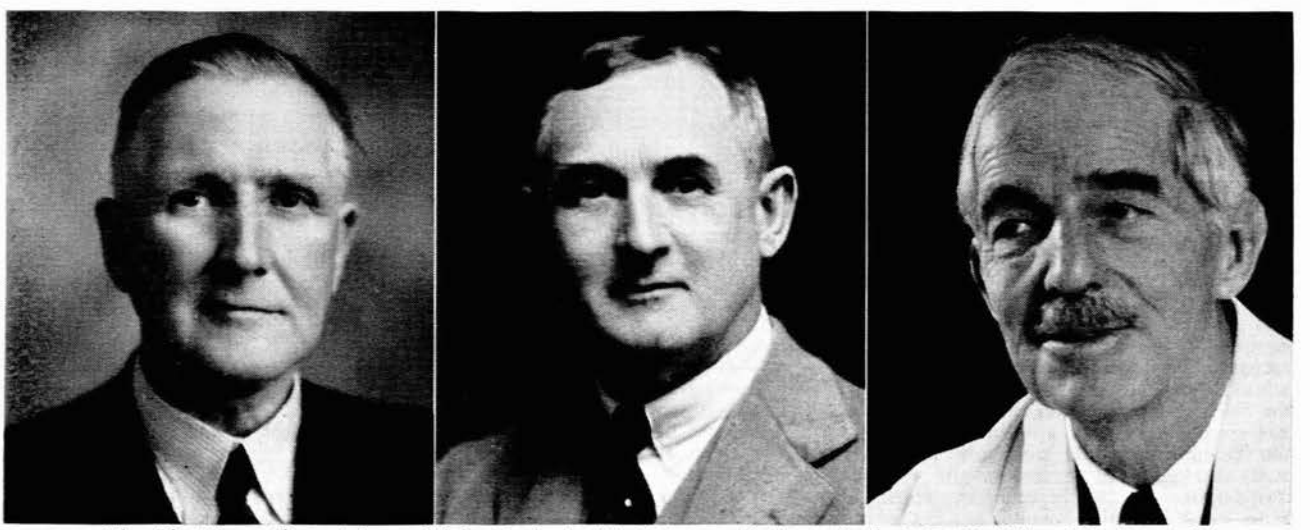
The Big Three

The first three clinical professors, viz. A. W. Falconer (medicine), C. F. M. Saint (surgery) and E. C. Crichton (obstetrics and gynaecology) arrived from the United Kingdom in February and March 1920. In addition 22 part-time honorary clinical lecturers were appointed (the names of only 7 of them appear in the 1920 prospectus) — most of them men who had previously served on the staffs of the New Somerset and Maternity Hospitals. Thus, 8 years after the establishment of the chairs of anatomy and physiology, the Medical Faculty had become complete and the University could now offer a full course for the degre of M.B., Ch.B.

Clinical teaching commenced in 1920, and from the start the Scottish system was adopted whereby the Medical School forms an integral part of the University. It was, therefore, necessary for members of the New Somerset Hospital staff to give up some of their beds to the newly appointed professors (Dr. McLachlan handed over his surgical firm to Professor Saint). This immediately gave rise to a good deal of discontentment, because there was already a great deal of jealousy abroad among members of the profession who felt bitter about being 'overlooked' and even more bitter about the professors being allowed private practice.

However, the calibre of the first 'big three' was such that petty jealousies and unjust opposition did not affect the school. The contributions made by the first clinical professors, who soon became known as 'Oubaas', 'Charlie' and 'Cuthbert', can never be adequately acknowledged. These three stalwarts were responsible for laying the foundation of clinical departments (the first in the country), and they remained on the staff throughout the period that the Somerset was the main teaching hospital of the University.

Not only the 'big three', but also their assistants during those early days, were men of exceptional ability, and Professor Saint recalls: 'I was exceedingly fortunate in my surgical colleagues at hospital and, from the start, we always worked together in the most amicable way'. Of the many 'assistants' who started at the New Somerset Hospital in those early days, Frank Forman, who joined the staff in 1924, deserves special mention. Being constantly 'on the spot' he was a tower of strength to the resident medical officers, not only in solving clinical problems but also in giving blood transfusions, administering anaesthetics and even performing tonsillectomies!



The Big Three (from left to right): Prof. A. W. Falconer *(Oubaas)*, Prof. C. F. M. Saint *(Charlie)*, and Prof. E. C. Crichton *(Cuthbert)*

Teaching Facilities

Clinical teaching at the hospital was difficult because of the lack of facilities. In 1920 the University was therefore obliged to erect at its own cost a 'temporary' wooden building in the grounds, which served as a combined outpatient department and clinical lecture theatre. The seating for students consisted of hard, wooden benches. The 'temporary' structure, which soon acquired the name of 'tin shanty', was used until 1938 and is still fondly remembered by hundreds of UCT graduates. It also contained the main hospital laboratory.

It is of interest to note that in 1925 a Committee of Inquiry into public hospitals, appointed by the Minister of Health, reported that 'the New Somerset Hospital, one of the oldest institutions in the country, is quite unsuitable for its purpose, either as a hospital or as an adjunct to a medical school'. Very little relief came during the first decade and, in 1928, the bed accommodation had increased to only 308.

Of the three departments, medicine, surgery, and obstetrics and gynaecology, the former two, because of their wider scope and more comprehensive nature, were inclined to be regarded as major ones and equal in importance. As a result, they were regarded as complementary, requiring an even distribution of beds and times allocated to them. Professor Falconer and Professor Saint were each given about 35 beds, while Professor Crichton was given 17 (he considered this 'quite adequate'). Both Professors Falconer and Saint favoured morning work, and Professor Crichton was not opposed to afternoon work, so the former two concentrated on the mornings, when the bulk of their hospital work was done. This produced an upheaval on the surgical side of the hospital where the surgeons were accustomed to work in the afternoons. Professor Saint recalls:

'As a result it was especially difficult for the Department of Surgery, since the regular anaesthetists, for example, were occupied in private in the mornings and so could not attend. However, this difficulty was finally overcome by my second house surgeon, Dr. H. Berelowitz, deciding to specialize in anaesthetics, and he became my anaesthetist, which post he retained as long as I remained on the hospital staff and also in my private work until I retired. No-one could have had more obliging, pleasant and efficient service throughout that whole period'.

In the wards students were resented by the patients, who had not yet been 'student-trained' and were very indignant and chary of this 'inferior' treatment, although women students were apparently accepted. Despite this, the students' opportunities were numerous, and to a large extent they did the work of housemen, e.g. Louis Mirvish had given 100 anaesthetics and had assisted at innumerable operations before qualifying.

Clinical material was at first very sparse, but it was amazing how quickly the outpatient department developed and extended, and how the patients admitted improved in number and quality, i.e. for teaching purposes.

Postgraduate teaching was virtually non-existent in the clinical departments although in the department of medicine Frank Forman was a great source of inspiration to house physicians and, since he was always on the premises, they received what was tantamount to postgraduate instruction.

In the beginning there were hardly any specialist departments. General medicine included all medical subjects except dermatology; the children's wards were directly under the professor of medicine and patients with enteric fever and meningitis were kept in the general wards. General surgery included all surgical subjects except ENT and ophthalmology, while obstetrics and gynaecology was concentrated mainly on midwifery. The general surgical wards took all sorts of patients including a large 'smattering' of orthopaedic and even some gynaecological patients. Professor Saint's Wednesday operating lists often included removal of a knee cartilage, bone plating, fixation of a tuberculous spine and repair of a cleft palate and harelip as well as the 'ordinary' gastro-enterostomies, Halsteds, cholecystectomies, thyroidectomies, etc. Not infrequently the list included a hysterectomy or ventral fixation of the uterus. Excisions of the tongue and the maxilla for carcinoma were common. General surgery was still truly general.

It should also be remembered that during these years the diagnoses were made at the bedside and not in the laboratories of other departments. The clinical school was built in that tradition and owes some of its strength to that foundation. X-ray diagnosis was limited in its scope and of poor quality — pyelography, cholecystography and angiography had not yet been heard of. Electrocardiographs were done only on very special patients who had to be transported to Professor Jolly's laboratory at the College by ambulance, but frequent use was made of the MacKenzie polygraph and the Dudgeon sphygmograph. The 'laboratory' consisted of a trolley in the middle of Parsons ward with an adjacent table containing a microscope. With all his virtues Professor Falconer was unhandy in the laboratory, and stains were usually splashed all over the place. To enable Dr. Forman to use the microscope at night without disturbing patients, a box with green curtains was rigged up into which the microscope, the light and his head just fitted. It was appropriately called the 'Punch and Judy'. On the other hand urine and stool examinations were regularly done and the ward students were from the very beginning initiated into the usefulness and the beauties of the fundus oculi and blood slides.

It was not uncommon to have patients with malaria in the medical wards (fortunately Professor Falconer had had a vast experience of malaria in Macedonia during World War I), and patients with leukaemia were quite common. Neurosyphilis was another common disease in the medical wards. In discussing this, Professor Forman recalled the famous 'tryparsamide incident'. At that time the Rockefeller Institute introduced tryparsamide for the treatment of parenchymatous syphilis and Professor Falconer wrote to the Institute for a supply of the drug, which was not yet on the open market. Just then a patient who had come from Rhodesia was admitted in a stuporose condition. Dr. Forman did a lumbar puncture and found trypanosomes. By a strange coincidence the tryparsamide arrived from the United States of America that very same day. (It will be remembered that this drug got its name from its use in trypanosomiasis.) So it was injected and the patient was cured!

Medicine in those days was in many ways different from that of the 1960's. Most of the pneumonias were typical — with the expected crisis on the 7th day, heralded by redux crepitations. Syphilis was rife, with all the clinical consequences, viz. myelitis, gummatous meningitis, tabes, lightning pains, gastric crises, aneurysms, etc. And the treatment was terrible — NAB injections, mercury injections and iodides by mouth — on and on and on. One can compare it with the interminable 'wash-outs' for gonorrhoea. For long diabetes was treated by diet (the Allen diet) alone. Diabetic ketosis meant certain death.

Myocardial infarction was not recognized — it was called status anginosis. Frank Forman recalls the wave of excitement that heralded the introduction of mercurochrome — the great sterilizer, which by injection was going to overcome all septicaemia, not excluding subacute bacterial endocarditis. It quickly fell from this high level to the lower grade of a surface-sterilizing agent.

On the surgical side syphilis and other venereal diseases were extremely common and there was even a ward for venereal diseases at the Somerset. There were no sulphonamides or antibiotics. Intravenous-fluid therapy was practically unknown, blood transfusion was still in its infancy, anaesthesia was largely of the 'rag and bottle' type, plain catgut had to be prepared and sterilized by the theatre sister, and eggs had to be placed in sterilizing drums to test the efficiency of the sterilization!

The number of housemen was at first limited to 5 and by 1927 rose to only 8. There were no full-time senior resident medical officers or registrars (but Frankie Forman was there, of course!) — consequently recently qualified graduates were often given most responsible tasks, particularly as far as emergency surgery and anaesthesia were concerned. When Doctor Forman first joined the medical school, the Somerset Hospital was all but denuded of anaesthetists and he had to give scores of anaesthetics for major operations done by doctors Moffat, Elliott and others. Chloroform and ether were used. At this time he even ventured into surgery and recalls that being one of the few people on the premises all the time, he initiated the occasional house surgeon into the mysteries of tonsillectomy ('with the guillotine — not slicing them but enucleating them') and circumcisions. *He also performed the first blood transfusion at the Somerset and no surgeon has ever had a larger audience!* Compatibility was tested on a slide, donor's corpuscles against recipient's serum, blood was run into citrate and strained through muslin before transfusion. The operation was without reaction!

Anaesthesia

Despite the difficulties, however, the standard of clinical work was always of the best, and soon there appeared some measure of specialization. In 1922 the departments of ophthalmology and ENT were 'recognized' by the University and in the same year anaesthesia, venereal diseases and vaccination were introduced as new subjects.

Dr. Bamfylde Daniell introduced ether, nitrous oxide and ethyl chloride as 'new' anaesthetic agents and encouraged the use of oxygen cylinders. Dr. H. Berelowitz contributed a great deal, and the following account of his early days given by him in 1962 reflects, *inter alia*, how he 'discovered' endotracheal anaesthesia:

'In Edinburgh I was taught the use of chloroform, but in Manchester I learned all about ether and preferred it to chloroform. When called upon to teach anaesthesia, I concentrated on demonstrating how to induce an anaesthetic with ether by means of the open-drop method and to maintain it either with warmed ether vapour from a Shipway or with the drop bottle. But, as chloroform and its mixture with ether was extensively used all over South Africa, the students were taught to use chloroform C_2 E_1 and ethyl chloride followed by ether.

Students were also taught dental anaesthetics consisting of nitrous oxide alone, or with air, or ether anaesthesia by means of a Clover inhaler with or without an ethyl chloride attachment, the patient sitting in an upright position in a dental chair.

Intratracheal ether by the insufflation method was introduced by me in 1922 soon after my appointment. The event that brought it on was an operation by Professor Saint for excision of a malignant maxilla — a formidable operation at that time. He did a preliminary laryngotomy to pack off the pharynx and provide me with an airway. The strong ether vapour from a Shipway was unsuitable as it would have caused a fulminating tracheo-bronchitis, so I used chloroform vapour from a Junker, given by means of a small catheter placed in the laryngotomy tube. The patient did well, but I was not satisfied. It was evident to me that I needed better control and no laryngotomies. All I needed was to blow into the patient's lungs a big volume of air carrying a weak ether vapour, thus making me independent of his breathing and free from the dangers of chloroform. The air was easily provided by an electric air blower. The weak ether vapour was obtained by blowing the air over the surface of a wide jar containing ether (not bubbling through as in a Shipway). To warm up the ether-laden air was easy enough. The main problem was not to rupture the patient's lungs. A mercury blow-off safety valve giving adjustable pressure made it safe. I tested the strength of the ether vapour by blowing it into my nostrils and I found it non-irritating. A makeshift laryngoscope had to be improvised for intubation with gum-elastic catheters. Like all first products it was primitive — so was the first motor car or even the first electrocardiograph, but it worked efficiently for nearly a decade and gave no trouble. I found endotracheal insufflation flexible and easy to control. Difficult surgical procedures became easy, such as laminectomies, cancer of the tongue, glands in the neck, operations on the jaw, thyroid, or the skull. The rhythmic throb of the air blower became a familiar sound in Saint's operating theatre, enlivened the proceedings, and filled it with an air of cheerful confidence. It also made visiting doctors anaesthetic conscious and quite a number of them discussed anaesthetic problems with me. Some would turn up regularly to watch and learn, and now and again I would get a 'phone call for advice if a difficult case was on'.

Dr. Arthur Bull, the present Head of the Department of Anaesthesia, comments on this as follows:

'The foregoing description of the development of endotracheal anaesthesia appears to have been a description of the first use of this technique in South Africa. It was in 1921 in England that McGill, now Sir Ivan McGill, was responsible for introducing endotracheal anaesthesia on a wide scale. Dr. Berelowitz's problem in Cape Town was solved by himself without knowledge of or recourse to the work of McGill at that time, and may fairly be looked upon in the light of an independent discovery of this technique by Dr. Berelowitz in Cape Town.'

When Dr. Royden Muir joined the staff he brought with him from overseas the Pinson Bomb (now in the Anaesthetic Section of the Saint Museum) for giving ether vapour after induction by Hewitt's wide-bore ether inhaler (also in the Museum). Later on he did much spinal anaesthesia in the urology department of the hospital.

In 1927 radiology became a separate unit with its own lecturer. Orthopaedics continued to remain an integral part of general surgery during this first decade, and Professor Saint himself held a regular fracture clinic, usually in the physiotherapy department. Urological patients gradually became separated off under the charge of Dr. E. Barnard Fuller who, although a general surgeon, had a special leaning towards this subject.

Research in the clinical departments 'did not come up prominently for consideration' according to Professor Saint. However in the department of ophthalmology, Dr. D. J. Wood personally sectioned and stained every piece of tissue that he had removed in either his hospital or private practice and made a collection of pathological specimens which he bequeathed to the department. He made magnificent demonstration drawings, paintings, and models for his class and persuaded no less an artist than Theunis de Jongh to paint some of the pictures of fundic pathology (some of these are still in use). His reputation extended far beyond the borders of South Africa because of his frequent publications in the British journals of medicine and ophthalmology. (He was the South African representative on the editorial board of the latter from 1917 to 1937).

Medical students had to find their own way, usually in the old Cape Town trams, between College House, the medical school and the hospital, about 20 - 30 minutes away, and students of that era still well remember those journeyings to and fro, travelling in 'old crocks'. A great deal of walking was also necessary — first down the avenue to the tram in Adderley Street, then down Portswood Road to the hospital and, on the days when demonstrations in mental diseases had to be attended, a walk to the station to catch a train to Observatory and from there a 'hike' to Valkenberg.

THE SECOND DECADE — 1928 - 1938

Between 1926 and 1928 the medical school moved across to the new Wernher and Beit Laboratories at the Mowbray end of Rhodes' Groote Schuur Estate. Clinical instruction,

A day in September 1934: After his marriage to Dr. Golda Selzer, Dr. F. Forman participated in the tutorials and ward-rounds, as usual, for the rest of the day — so that it can rightly be said that even in spite of this dramatic event, 'Frankie was always there'. As he left the hospital later that day, he was greeted by a guard-of-honour of buttonholed medical students holding an arch of interwoven stethoscopes. (The student second from the left is Julius Bremer; the student fourth from the left is unmistakeably Sarel Oosthuizen; and the student holding the nearest stethoscope is Solly Donen.)

however, continued at the New Somerset Hospital. The authorized bed roll was 308 and facilities were still greatly lacking with hardly any chance of expansion because of the great depression of the early 1930's and the pending erection of Groote Schuur Hospital. However, in 1934 it was decided that the New Somerset Hospital should continue to function after the opening of the new hospital, and minor improvements to the dilapidated buildings were made from time to time. Meanwhile, the numbers of medical students were rising rapidly and overcrowding became a serious problem. Despite this the clinical teaching was of a very high standard and in 1933 the first 'postgraduate course' was held at the New Somerset Hospital. It extended over 2 weeks and was instituted as a 'refresher' for general practitioners.

Clinical Work

Clinical work was still greatly hampered by lack of adequate facilities. These were the days before antibiotics and sulphonamides, and special investigations were still limited. Apart from arsenical preparations used for syphilis, quinine for malaria and emetine for amoebic dysentery, there were no parenteral agents that had any effect on the common infecting organisms. In the medical wards pneumonia was a common and serious disease which had to run its course. Routine treatment consisted of 5 min. of adrenaline 4-hourly and ½ oz. of brandy by mouth. Many physicians were in favour of the application of hot packs and antiphlogistine to the chest, but the 'Oubaas' scorned these 'barbaric practices'! Meningitis was treated by repeated lumbar puncture, but many cases were fatal. Sciatica was treated in the medical wards by epidural injection of 150 - 200 ml. of saline solution — often with dramatic results!

In 1934 an electrocardiograph was installed at the top of the stairs at the Somerset Hospital. In spite of very careful electrical insulation there was so much interference that tracings had to be made in the middle of the night. At first patients were brought from the wards to the machine, but later special leads from the patients' beds were installed. Professor Forman instructed the house physicians in the use of the machine, but 'Oubaas' was never impressed with the results.

Soon after Dr. Linder's arrival in 1929 he started a weekly diabetic clinic at the Somerset Hospital — held in the 'tin shanty'. At first only 3 or 4 patients attended, but the numbers soon grew. Drs. Linder and Dorothy Vadas (later Cowie) also visited patients in the wards — 'armed' with a large wooden box fitted to contain all the necessary tubes, bottles, pipettes, etc., which had to be carted back and forth between hospital and medical school. (This was quite a feat for little Dolly Vadas who took charge when Dr. Linder went on long leave!) Thanks to Dr. Linder's great sense of humour, however, the task was never too much and the following 'incidents' recorded by Dr. Vadas reflect the man:

'There was the occasion when Professor Falconer in the course of a clinic sent his houseman to telephone Dr. Linder to find out what a G.O.K. was. This had appeared in the report on the cell count in a cerebrospinal fluid. Dr. Linder explained that it stood for 'God only knows'.

On another occasion Dr. Linder, getting rather disgusted at the bulky specimens of faeces arriving for the occult blood test, wrote on his report: "Kindly note that this laboratory is spelt with a 'B' and not a 'V'!"

Blood transfusion was still a somewhat primitive procedure. Blood was tapped from the donor by house surgeons into a flask containing sodium-citrate solution and had to be constantly stirred and then immediately given to the patient. The blood was transfused into the patient through a funnel and rubber tubing — needless to say, reactions were common and almost inevitable. It was only in 1935 that Marriott and Kekwick indicated how blood transfusion could be graded to the needs of the patients and, had it not been that blood was so scarce and difficult to obtain, there might have been many tragedies in those early days.

Gastro-intestinal suction was only perfected by Wangenstein of Minnesota, USA, in 1932, and the technique took some time to reach Cape Town and was hardly used at the Somerset. Intravenous-fluid therapy had only recently been introduced (1926) by Hudson and Matas and it was not until 1934 that the first 'drip set', devised by Marcus Cole Rous, was used. Fluid requirements were not adequately understood and the only solution used was saline prepared in the hospital with triple-distilled water. This was decanted into a large long-necked, 1,000 ml. flask with a rubber bung, which was

suspended in a special glass box heated by 2 electric light globes. Inside the box was a thermostat — it was considered essential that the saline should reach the patient's vein at body temperature. Rubber tubing was used. It is not surprising that pyogenic reactions were common and many surgical patients suffered from severe oedema owing to overhydration and salt-loading — many received several pints of the 'health-giving' fluid pre-operatively and up to 5 litres of saline were given even on the first postoperative day!

By 1937 antibiotics were still unknown and 'red prontosil' (introduced by Domagsk in 1935), which could be used as an injection only, was the only sulphonamide on the local market. Despite all these difficulties and deficiencies, however, infection of 'clean' surgical cases was very rare — no doubt owing to the strict aseptic regime which was followed to the letter by everyone, including the students, who were appointed as dressers in the surgical wards and instructed by Professor Saint himself in dressing technique. This was done in the Charles Murray Ward. The complete aseptic technique of scrubbing up and donning of gloves was practised and, when the dresser had gone through the routine, he proceeded with the dressing, shortening of drainage tubes, removal of sutures, etc., under the eagle eye of the professor, the sympathetic eye of the ward sister, and the expectant gaze of his fellow students. Many of these sessions left indelible impressions on the dressers, and one in particular may be mentioned. The 'eagle eye' spotted a signet ring bulging through a dresser's glove while he was performing! Suffice it to say that what followed left an everlasting impression on all in attendance!

Students were also expected to attend in the operating theatre when their chief was operating, and the fourth-year student of the case was responsible for the pre-operative shaving and preparation of the skin, which had to be done on the previous afternoon. (The patient was put in a biniodide 'compress' for the night.) He had to assist at the operation and write up the operation notes for presentation to the chief on the following day. At the end of the operation the wound was thoroughly rinsed with 1:20 carbolic acid, and postoperative wound infection was very rare. Many hours were 'wasted' sitting on the gallery gazing at operations, but there is no doubt that students learnt to know aseptic technique which was of a very high order (despite the fact that all the surgeons and all but one of the gynaecologists wore the masks below their noses).

BIPP was used freely for packing all kinds of cavities and as a routine in patients with acute and chronic osteitis. Acute infections were always serious, and cellulitis, erysipelas and septicaemia were common. In 1934 a young casualty officer at the Somerset died of sepsis within 2 days of cutting a corn on his toe. Venereal diseases also posed a great problem, and patients attended by the score.

The 8 housemen (salary £8 6s. 8d. per month!) and the single casualty officer had to undertake most responsible work. There were 3 house physicians, 3 house surgeons and 2 housemen for the special subjects. Each houseman was in sole charge of his 40-odd beds and his chief did a full ward-round not more often than once a week. On the surgical side the assistant surgeons occasionally came to the assistance of the house surgeon, but for the rest he was fully responsible and treated many emergencies himself including all fractures excepting those that required plating. Vast numbers of anaesthetics were also given by the housemen, and the death-rate was rather appalling, especially in the casualty department. On the medical side, on the other hand, Frank Forman was *always* to be found in the wards and was always ready immediately to come to the assistance of the house physician.

Surgery

During the 1930's there was an increasing tendency towards specialization, especially in surgery. In addition to the specialities which had become 'recognized' during the previous decade, viz. ophthalmology, ENT and urology, others were agitating for recognition.

Orthopaedics. In 1928 orthopaedics became an independent sub-department at the New Somerset Hospital, although Professor Saint retained a certain number of 'fracture beds' in Charles Murray Ward until 1937. (It is of interest that Frans van Zyl's first appointment to the teaching hospitals in 1935 was that of assistant clinical lecturer in orthopaedics!)

The establishment of orthopaedics as an independent speciality at the Somerset Hospital was quite a feat in those days when general surgeons regarded orthopaedics as their 'right'. At first there were only 2 official beds obtained through the kindness of Mr. Lennox Gordon. However, there was friendly cooperation and the dynamic spirit of Dr. Pieter Moll soon made itself felt. Although he had trained in Germany, his first assistants and later successors were all Liverpool men, and he himself had visited Liverpool to have a Dupuytren's contracture corrected by Professor McMurray. There he became very friendly with Sir Robert Jones with whom he often 'dined and wined' until the small hours. The Cape Town department, therefore, developed into an offshoot of Liverpool.

Dr. Moll immediately set about organizing orthopaedics in the Cape Peninsula. It was largely through his efforts (and his very sharp tongue, too!) that things got moving. It was through his efforts that the Lady Michaelis Home was acquired as a teaching institution and he, together with his assistant and successor, Pieter Roux, were instrumental in obtaining the Princess Alice Home.

Dr. Pieter Moll's tragic death in a motor-car accident in 1934 came as a great shock to all. His name is perpetuated in the present Pieter Moll and Nuffield Chair of Orthopaedic Surgery (founded in 1955), made possible by generous contributions to the University by the Pieter Moll Aid Fund and Nuffield Trust.

At first Dr. Moll attented to 'cold' orthopaedic cases only at the Somerset and found it difficult to establish a fracture clinic. Soon, however, it became obvious that the results of the orthopaedic surgeons were a great improvement on those treated by Kramer's splints and massage. Moreover, doctors Roux and Bell were prepared to attend to traumatic cases at all times of the day or night, and so by the end of 1937 had won the 'battle of the fractures'.

Plastic surgery remained an integral part of general surgery, although Mr. N. Petersen was doing more and more of the work because of his special interest in it. *Thoracic surgery* was still in its infancy in Cape Town, although by 1937 Professor Saint had already done some pioneering in that line. *Neurosurgery* was still entirely in the hands of the general surgeons and *cardiac surgery* was beyond the horizon.

Medical Departments

As far as the medical departments were concerned, *dermatology* had been 'recognized' since 1920 under Dr. Hugh Smith. However, it was only in 1929 that a specialist, viz. Dr. Moorrees Bosman, joined the staff, and in 1930 he replaced the late Hugh Smith as head. The 'department' had no beds, the outpatient clinical lectures to students were held in the physiotherapy department, which

was divided by curtains into 2 sections — Dr. Bosman lecturing to students on one side and Dr. Krone attending to patients on the other, while simultaneously the physiotherapy department was carrying on its routine functions! In 1931 the department moved into a tin shanty in the hospital grounds which was a great improvement in space, but a veritable inferno in summer. At the time the teaching in dermatology consisted of 18 systematic lectures given at the Medical School on Friday afternoons and a clinical demonstration at the Somerset on Wednesday mornings. The ancillary services such as histology, bacteriology, etc., were quite inadequate.

Paediatrics. The UCT made its first tentative gestures towards the paediatric age group and its special problems in 1927 when Louis Leipoldt was appointed as the first lecturer in diseases of children. The years of grace had not by then entirely gone, and the first entry in the calendar states that 'the classes will meet on Tuesdays and Thursdays at 2.00 p.m. at the New Somerset Hospital for ward and outpatients demonstrations. Formal lectures will be given at the hospital and at the Buxton Hospital for Children, Claremont, at times convenient to the class'. The lecturer may have been responsible for this kindly terminal thought. It would have been in keeping with his nature as a poet of renown, a connoisseur of wine and food, and a man of many parts. His distinction as a paediatrician probably suffered by comparison with his other undoubted accomplishments, and it may be mere idle rumour that credits him with advising mothers to give their infants wine instead of milk! But there is no doubt at all that the first of the University's paediatricians was a most distinguished South African. His biography is fully recorded elsewhere. Six years later an assistant lecturer was appointed, Dr. D. L. Dowie Dunn. Dr. Dowie Dunn contributed a great deal towards the development of paediatrics, not only by his work at the Somerset Hospital but also at the Princess Alice, Lady Michaelis and Lady Buxton Homes. While Leipoldt's teachings were somewhat unorthodox, Dr. Dowie Dunn, assisted by Dr. Wolf Rabkin and later by Dr. Louise Tomory, ensured that the students had a sound training in diseases of children. In those days, however, there was still a general resistance to 'baby doctors', and progress was slow.

Neurology and psychiatry. In this period neurology and psychiatry was still included under the heading of mental disorders and psychiatry was taught almost exclusively at the mental hospital by the superintendent in charge at the time. However, Dr. F. H. Kooy, who had been on the staff of the Somerset Hospital since 1925, held a small outpatients' service once weekly and gave a few lectures to the students. In 1932 he was joined by Dr. Sam Berman who attended mainly to neurological disorders.

Anaesthetics. Dr. Berelowitz says the following about anaesthesia at this time:

"I taught the students the new techniques as soon as they were established for I believed in modern methods. When I bought a McKesson machine I used to bring it to the Somerset Hospital and teach the students how to use it. Later on the students bought a McKesson machine with some of the Rag money.

"When Boyle machines became available the students were taught 'gas-oxygen-ether' with the Boyle machine, as well as intratracheal intubation by the visual and blind methods. 'Avertin' was used as soon as available, chiefly for thyroid cases, for the operation for toxic goitre was called 'stealing the thyroid', the patient not knowing of the operation until it was over.

"When 'pentothal' came the students were taught its use and administered it in my presence.

"In 1930 Dr. Eric van Hoogstraten, a graduate of our University, started in Cape Town as a specialist in anaesthesia. He had been in England and returned with a McKesson machine for giving pure gas and oxygen for major surgery. It was the first machine in South Africa. In no time the whole town became gas-and-oxygen conscious and for an anaesthetist to use ether was almost a misdemeanour. How was it given for major abdominal surgery? Let me describe it. It may sound incredible, but it is described in the text-books:

"It is called *secondary saturation*. Briefly, pure nitrous-oxide gas is given till you have muscular spasms, widely dilated pupils and almost complete respiratory arrest. At this stage you turn on 100% oxygen, but if respiration has already stopped you inflate the lungs with pure oxygen under pressure. This revives the patient and you continue with a mixture containing 5% oxygen or a little more — 7 or 8%. If the patient does not relax you repeat the secondary saturation again and again till the patient is finally subdued. This could only be done with a McKesson, not with the old Boyle which was too slow for such an emergency. Dr. Lundy at the Mayo Clinic asked me what I thought of secondary saturation and I told him that the correct name for this procedure is 'asphyxial shock'. It resembles the state of a boxer concussed by a knock-out blow. I wouldn't call it anaesthesia".

A staff-student rugby match in 1936. From left to right: Dr. Karl Bremer, Dr. Guy Elliott (No. 13), Dr A. Marais Moll, and Prof. A. W. Falconer.

This is a very early and accurate appreciation of 'secondary saturation' which unfortunately did not fall into wide disrepute for another 15 years or so.

But the coming of Dr. van Hoogstraten to Cape Town was a good thing. It helped to bring to the public the importance of good anaesthesia and turn this branch of medicine into a speciality which he still practises with great skill and distinction.

Anaesthesia was then, as now, considered an ancillary service. From many

accounts by anaesthetists of the time on surgeon-anaesthetist relationships one imagines that surgeons were then very conscious of the derivation of the word ancillary from the Latin, ancilla, a housemaid, for it would seem that is just the way they treated their anaesthetists.

Dr. van Hoogstraten left Cape Town in 1929 for London, where, he states, he found things much the same, even at the London Hospital and at Guy's. He continues:

'By a stroke of luck in my wanderings, I met Dr. McKesson who was demonstrating with Dr. F. P. di Caux his McKesson machine at the North Middlesex Hospital. My eyes were opened, and for the first time I saw pressure gauges, reducing valves and single large-bore endotracheal tubes, with gas and oxygen being fed directly and easily controlled, into a water flow-meter-triple-bottle Boyle machine with plungers. Compared with my past experience, the results were so spectacular that I decided to become a specialist anaesthetist, especially after I had seen and learned the art of blind intubation from Dr. McGill. On my return to Cape Town in 1930, I was appointed honorary anaesthetist to the Somerset Hospital where, by now, Drs. Muir, Forbes and Hochschild were specialists and Drs. Berelowitz, Weinberg, Jack Smith and Ernest Liberman the general practitioner help-outs'.

From this it is clear that round about the late 1920's and early 1930's a clear line of demarcation existed between specialist anaesthetists and general practitioners who were primarily interested in anaesthetics. Dr. Berelowitz, while being a pioneer in anaesthesia, never maintained that he was a specialist anaesthetist. He used to, and in fact still does, take great pleasure, when asked, in stating, 'No, I am not a specialist, I am an expert'.

'On my return to Cape Town in 1930', Dr. van Hoogstraten continues, 'there was no anaesthetic department, and conditions and methods were just as primitive as ever. My efforts to introduce modern methods were accepted luke-warmly as I was only a youngster and the profession very conservative, with surgeons like Saint, Mossop, Elliot, E. B. Fuller, Luckhoff, Wood, Lennox Gordon, Crichton, Impey and Goldschmidt, to mention only a few. I had to bring along my own apparatus and my own nitrous oxide, which I then imported from England. Teaching students was a bugbear, as surgeons were impatient and my gas scarce and expensive. It came as dangerous deck cargo, and was apt to be jettisoned in bad weather'.

This appears to be the first introduction of nitrous oxide on any large scale in Cape Town.

These accounts give us a glimpse of anaesthesia as it was in those 'early days' and in fact, completes what may be termed the first phase in the development of the department of anaesthetics. It would be more correct perhaps to say that there was no department of anaesthetics, but that a small group of pioneers were very actively following in the footsteps of Dr. Bampfylde Daniell and laying the foundations of the specialty of anaesthetics which has undergone mushroom-like growth since this beginning.

Students

The 1930's were trying times for medical students. In the first place fourth-year students had to spend a month at the Somerset Hospital before the official university term commenced for the purpose of becoming acquainted with "dresser's duties". As there were no formal lectures at the Medical School during this period and the University residences were not open, these students found accommodation in 'digs' in the Sea Point area.

Secondly, there were the great distances to be covered. Many students lived at the Men's Residence (Smuts Hall) and Women's Residence (Fuller Hall) on the University campus. Public transport was inconvenient or non-existent between the various venues with the inevitable result that more and more students acquired motor cars. These were mostly 'old crocks' crammed to the gunwales with a boisterous, roaring lot of students more intent on getting their D.P.'s than on absorbing knowledge. The daily routine became quite an endurance test: first from Smuts Hall to the Medical School for the early lecture from 8.30 to 9.30 a.m.; to the Somerset Hospital for the 10 o'clock clinic or ward-round; to College House for lunch; then back to the Somerset for the two o'clock clinic (the route, unfortunately passed the main Cape Town cinemas which often proved more attractive than 'lumps and bumps'), and finally back to Smuts Hall in the evening. On some days the trip included visits to the PMH, or St. Monica's or the police morgue or Valkenberg or even Victoria Hospital, Wynberg (in the middle 1930's when the classes became too large for the New Somerset). Nevertheless, some students could still find time to go to the Students' Union for tea and mix with the 'barbarians on the hill'. More frequently, however, the only way the student had of quenching his thirst was to dash across the road at the Somerset for a dish of tea at the Kiosk (or for the more erudite gentlemen, a trip down to the Docks tea-room or, even better, to an Italian liner for a bottle of 'vino').

AFTER 1938

With the opening of Groote Schuur Hospital in 1938 the New Somerset Hospital ceased to be a teaching institution, fortunately only for a short while. Instead, it became a hospital for the treatment of non-European patients and training of non-European nurses. Very soon the difficulties that arose in connection with maternity services in the Peninsula and the phenomenal demand for beds at Groote Schuur Hospital prompted the University to turn its attention back to the Somerset Hospital to find facilities for training students.

In 1940 the Cape Hospital Board was approached about the possibility of providing a maternity block, and it was agreed that the Shipley Pavilion should be reconditioned for the purpose. The necessary alterations were made, and on 15 July 1942 the building was opened as a maternity section of 50 beds for the training of non-European midwives and of medical students of the University of Cape Town. The consultant staff would be provided by the University and a site in the grounds was leased to the University for the erection of a hostel for the students. In 1947 further extensions were added.

In 1945 the University felt obliged to approach the Cape Hospital Board once more about beds because of the tremendous demand for the beds for non-European patients at Groote Schuur. As a result of the negotiations it was agreed that 32 medical beds would be placed at the disposal of the University in King Edward Ward at the Somerset Hospital from 1946.

In 1954 a gynaecological ward of 17 beds was opened for the 'University firm' at the New Somerset Hospital. Dr. H. Jordaan was appointed as the first registrar to this unit and so became the first Coloured registrar to be attached to our Medical School. (He subsequently obtained the M.D. in Obstetrics and Gynaecology — the first in our University — and in 1961 he was appointed honorary gynaecologist on the University staff.)

In 1955 representations were first made for a surgical unit at the New Somerset Hospital where facilities already existed for the teaching of medicine and obstetrics and gynaecology. The main reason for requesting these beds was to provide facilities for postgraduate training of non-

European students in surgery. Although the Provincial Administration was sympathetic, the New Somerset Medical Committee was strongly opposed to such a unit, and the first request by the University was turned down. However, the matter was not dropped and negotiations were re-opened in 1957 and again in 1960. Now the New Somerset Hospital Board, on which the University has two representatives, viz. Prof. W. H. Hutt and Prof. J. H. Louw, was most sympathetic. Eventually, at the end of 1961 it was agreed that the University would be granted 17 surgical beds some time during the course of 1962. At long last, therefore, it has become possible to offer our non-European graduates facilities for postgraduate training in all three main disciplines of medicine.

This article is based on a number of extracts from information obtained in connection with the publication of a book on the history of the University of Cape Town Medical School. The information has been obtained from numerous sources including personal communications from various colleagues. Indeed, the number of colleagues concerned is so large that it is not possible to mention all by name, but I should like to thank in particular Proff. C. F. M. Saint, F. Forman, F. J. Ford, F. D. du Toit van Zyl, and Drs. S. Berman, R. Lang, A. Bull, H. Berelowitz, E. van Hoogstraten, W. Schulze and D. Cowie (formerly Dr. Vadas). Reports of the Senate and Council of the old South African College and of the University of Cape Town, as well as of the Cape Hospital Board, have provided a great deal of information. Other sources of reference will be fully acknowledged in the publication referred to above.