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RES MEDICA

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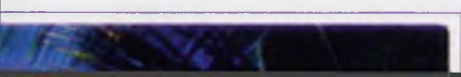
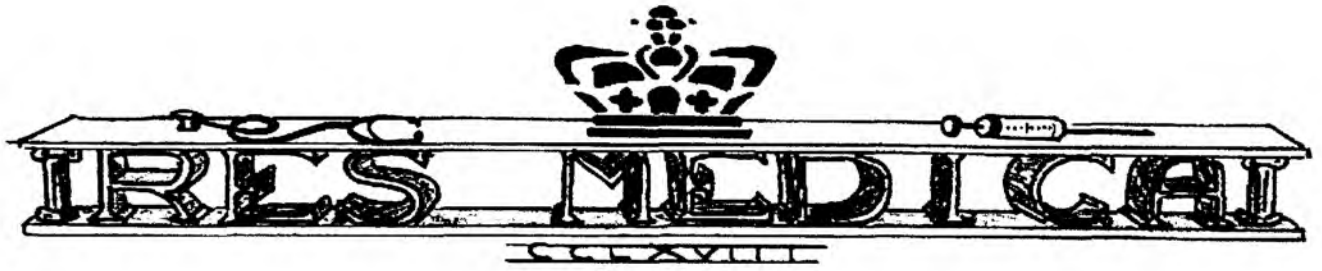
International Medicine





Continuing Noble Traditions

Long gone are the days when a map of the British Empire would be brought before a throng of medical students with the proclamation: "Half of this red area contains medical services established by Edinburgh men!" Nowadays Edinburgh students, who still have one of the longest elective periods, can extend their influence to all four corners of the globe, where they can experience medical practice often far different to that carried out back home. For many, this will be the only time they can work abroad without requiring extra qualifications such as the USMLE.

Of course it is not just medical students who have this opportunity. In this edition Dr David Apps describes the role he has played in developing the medical curriculum in the University of Concepción, Chile. Even today Edinburgh medical teaching still sets global standards. One would not believe it now, but a large amount of the American medical schools can trace themselves back to Edinburgh - as the numerous plaques on the medical school wall testify.

Edinburgh's example has not always been exemplary. According to Professor Matthew Kaufman's illuminating article, the university had produced notable botanists. However, perhaps Dr Jardine paid a little bit too much attention to the *Papaver somniferum L,* the infamous Opium Wars being the result Thankfully Edinburgh's medical graduates are no longer instrumental in the instigation of major conflicts. As a number of our articles show, today's Edinburgh people are more likely to be involved in helping the local inhabitants combat major worldwide diseases such as HIV/AIDS.

Travel also comes with its own diseases. Dr Phillip Welsby, or "Dr Gloomy" as a national newspaper has branded him, provides us with a light-hearted but informative description of the many and varied diseases that one can contract when travelling.

Over the last century there has been a hugh transformation in travel. Locations that once took weeks or even months to reach are now, with the advent of the jet engine, just a matter of hours away. Never before has the world seemed so small, but still medical students find the remotest places possible for their electives (including Perth), albeit arranged by email.

What will the next one hundred years bring? Will a future Res Medica carry reports of Lunar or Martian medicine? If the last century is anything to go by, one can never rule anything out.

The RMS plays an instrumental role in many student electives. Our Travel & Study Fund provides financial assistance to RMS members, making many an elective possible. This continues the role of the RMS and her members in developing global medicine. Of course one of our most famous members circumnavigated the globe, during which he developed a certain theory of evolution.

As this edition of Res Medica makes its own way around the globe may I as editor thank all those who have taken the time and effort to contribute to this issue. I make no apologies for repeating what many a previous editor has proclaimed: "Res Medica is back." Other issues are already in progress. A "History of Medicine" issue is planned for early next year, so I feel certain in proclaiming:

Floreat Res Medica

Presidents' Annual Dinner at the Royal College of Surgeons of Edinburgh

Above: Dr Gordon Findlater and Miss Panagiota Bantanidis at the pre-dinner reception

On Saturday 13th November, the RMS held its Presidents' Annual Dinner at Surgeons' Hall. The Guest of Honour was Professor Arnold Maran, a former president of the College. Other guests included Dr Gordon Findlater, Professor Brian Frier and Councillor Laurence Marshall representing the Lord Provost.

A good night was had by all eighty guests, a number that included numerous members of the lower years of the medical school, a sight seldom seen in previous dinners. Mention must be made of the outstanding organisation of the event which was led by the Annual Dinner Convenor, Miss Panagiota Bantanidis.

Our thanks go out to the College staff for their tireless work behind the scenes.

PHOTOGRAPHS COPYRIGHT OF ALAN WATSON

Clockwise from top left. Mr Mayank Madhra and Miss Julia Critchley; *The four presidents:* Mr Mayank Madhra, Miss Julia Critchley, Mr Andrew MacKenzie, Miss Claire McLean; Mr Graham Miller and Mrs Isobel Gray; Miss Sophia Bantanidis; Mr Edward Dunn and Miss Elizabeth Morrow; *From left:* Miss Rebecca Venn, Miss Nia Jenkins, Miss Lucinda Tulley, Miss Charis Johnston, Miss Olivia McSheaffrey, Miss Hannah Beckwith and Mr Scott Christie; Miss Sarah Brown, Miss Jasjot Singhota and Mr Richard Berg; Mrs Elizabeth Singh and Dr Fanney Kristmundsdottir; Professor Arnold Maran and Mr Mayank Madhra.

Inaugural Address

On Tuesday 21st September, the Society held its traditionial Inaugural Address to invited guests, fellows, past and current council members. Mr Simon Glover was kind enough to give us a highly interesting talk about his many and varied medical experiences throughout his long and distinguished career. The society was enlightened by his experiences serving as a Naval Medical Officer aboard one of Her Majesty's Submarines, his time spent in Africa, and his present medical role as an Orthopaedic Surgeon in the Borders General Hospital in Melrose.

It was at this event where the formal handover between old and new councils took place, where Dr Stewart Pattman (standing in for Dr Joanne Morling) handed over the medal of office to Mr Mayank Madhra.

After the formal events of the night had passed, old and new members enjoyed many a conversation over a canape buffet and drinks.

RMS Graduants of MBChB, 2004

Our congratulations are given to the following prominent RMS members who successfully graduated this year:

Mrs Joanne Morling (neé Sells);
Mr Stewart Pattman;
Mr John Wallace;
Mr Tom Russ;
Mr David Griffith;
Mr Ben Carrick.

Freshers' Week

Freshers' Week this year got off to rather an early start due to the new semesterised timetable the University is following. Nevertheless many council members offered their services to make this year's events some of the best seen in the RMS for many years.

Our Annual Freshers' Pub Crawl resulted in over one hundred students being taken pub-to-pub from *The Crags* to *Doctors* which is just a few yards away from the *RMS.*

The Annual Freshers' Address and Disco again attracted large numbers of students. Dr John Simpson gave a highly entertaining account of the do's and don'ts of university life. This was followed by a free disco and the launch of our new bar.

Congratulations must be given to the Entertainments Convenor, Miss Jillian Kell, for her sterling work in arranging such a memorable week.

Marriages

In the last year, there have been two marriages within the RMS. Our congratulations go out to the happy couples.

Mr Alan Morling to Miss Joanne Sells in Australia while Miss Sells was on her elective, December 2003.

Mr David Griffith to Miss Susan Sherry in Dalhousie Castle over the Summer.

The Royal Medical Society of Edinburgh - Council for the 268th Session.

Mr Mayank Madhra
Senior President

Miss Julia Critchley *1st Junior President*	Mr Andrew MacKenzie *2nd Junior President*	Miss Claire McLean *3rd Junior President*
Mr Tomas Barnes *House Convenor*	Miss Samantha McDonald *Business Convenor*	Mr Christopher Cartlidge *Library Convenor*
Miss Jillian Kell *Entertainments Convenor*	Mr Andrew Moorehead *Publicity Convenor*	Mr Edward Dunn *Computer Convenor*
Miss Panagiota Bantanidis *Annual Dinner Convenor*	Miss Lucy Khan *Museum Convenor*	Miss Catherine Webb *Editor, Res Medica*

Mr John Robinson *Senior Secretary*	Miss Panagiota Bantanidis *Junior Secretary*
Dr Christopher Thompson *Treasurer*	Mrs Elizabeth Singh *Permanent Secretary*


HIPPOCRATE DUCE NATURÆ MINISTRO
SOC:REC:MED:EDIN

West of the Andes - Undergraduate Medical Teaching in Chile, South America.

DAVID APPS

Reader in Biomedical Sciences

School of Biomedical & Clinical Laboratory Sciences, Hugh Robson Building, George Square, EDINBURGH, EH8 9XD

Wrenching myself away from Edinburgh in winter, I made two working visits of 2-3 weeks each to the University of Concepción, in central Chile, at the invitation of Drs Carlos González and Mario Muñoz, the vice-deans of Science and Medicine respectively. My remit was to meet with undergraduate course organizers and comment on their plans for a new medical curriculum, in the light of my experience as the first course director of Year 1 of Edinburgh's new curriculum, and as module organizer for Nutrition and Digestion, one of the six modules that make up the Biomedical Science component of this first year. Edinburgh's new course, which originally had the slightly embarrassing title 'Vision 2000', was implemented in October 1998, and has been extensively revised for the new semester system. In Concepción the new medical curriculum was introduced in February of this year.

Concepción lies some 500 km south of Santiago, close to the coast, on the estuary of the Bío-Bío river. No-one would call it a beautiful city – it was almost completely razed by an earthquake in 1960, and has been rebuilt in a rather uniform, utilitarian style, but it has a visitor-friendly layout of broad, leafy streets, built to a grid-plan around the central square, the Plaza de la Indepencia. Here in 1818 'El Liberador', Bernardo O'Higgins, proclaimed the independence of Chile, and now the Penquistas (natives of Concepción) sit there listening to music or political speeches, eating ice-cream, having their shoes polished or uninhibitedly expressing their affection for each other. The University of Concepción is the third-oldest in Chile, and one of the largest; it has a marine biology unit in nearby Dichato, and other out-stations further south in Los Angeles and Chillán. It is partially government-funded, unlike the private Catholic university on the outskirts of the city. The spacious main campus, just a few minutes' walk from the centre, has many modern buildings surrounding a broad central plaza, and its handsome white campanile (no longer open to visitors, after several unfortunate events in recent years) is a local landmark. A small lake is home to a family of black-necked swans, some of which were rumoured to have been caught and eaten by hungry students. I was struck by the relaxed but (the swans notwithstanding) respectful atmosphere – there were no graffiti or litter, but plenty of students sitting on the grass or under the trees, reading and talking. Behind the lake is a monument to the many staff and students who disappeared during the political violence following the military coup in 1973.

The previous medical curriculum was in many way like Edinburgh's, pre-1998, in that it was discipline-based, relied extensively on didactic teaching, and was sharply divided into clinical and pre-clinical phases. These features have largely disappeared from the new curriculum: biomedical sciences are now taught through a series of integrated, system-based modules, which are spread over five semesters and include contributions from the departments of physiology, pharmacology, pathology, biochemistry and microbiology. Anatomy stands partly outside this plan, and some of it is still taught in separate modules: this perhaps reflects the continued existence of academic departments, some with powerful and conservative heads. Another feature that I noticed and commented on was the relative lack of 'social medicine' and public health in the first three years of teaching, and the lack of emphasis on communication skills, ethical awareness, personal and professional development and so on, in the formal curriculum. In Edinburgh we found that conflicts between competing 'kingdoms' were counter-productive, in that each discipline insisted on defining its own input to the curriculum, resulting in far more detail than the students could reasonably be expected to assimilate; 'information over-load', as was recognized (and castigated) by the GMC in 'Tomorrow's Doctors', one of the driving forces for curriculum reform. This led to the creation of the Medical Teaching Organization, the remit of which was to oversee curriculum development, to maintain a balance between the contributions of the different Departments or disciplines, to develop case-based learning so as to integrate scientific, clinical, sociological and ethical approaches to cases, to oversee students' personal and professional development (including communication and consultation skills), and to coordinate assessment throughout the curriculum. Our experience was that the creation of the MTO, with its own budget for the delivery of medical teaching, was very helpful in overcoming conflicts between departments. It involved the creation of several new posts, although some members of the MTO were existing staff, seconded from their departmental jobs. Academic departments remain the basic organizational units in Concepción; on the other hand there is a real appetite for modernization among the teaching staff - the pharmacologists, in particular, have been enthusiastic users of case-based teaching methods for some years, and in the new course medical microbiology is taught in the same way. This is a very progressive development that will certainly be taken further, even though it puts a big demand on staff time. Many Edinburgh students will have encountered Drs Mariana Dominguez and Marcelo Fasce, colleagues from Concepción who have a particular interest in course development, and who visited us in the autumn of 2003 and attended many practical and CBL sessions in years 1 and 2 of the Edinburgh course.

I was rather surprised not to find much human nutrition in the course - this is an important topic that is easy for students to comprehend in the context of basic medical sciences. Nor was there any early teaching of basic clinical skills, such as blood-pressure measurement and respiratory function testing, or even first aid and resuscitation. Teaching of simple clinical skills from the beginning of the course helps student morale, as without it they can easily lose sight of their educational aims; furthermore much of this teaching can be done by nurses and first-aid instructors, and when students eventually arrive in clinics they are equipped with some useful skills. I suspect that arranging such sessions is administratively difficult in Chile, where a great deal of medicine is conducted privately. However the framework of the new course is in place, and given the enthusiasm and vision of the staff I met, there are certain to be further developments in the coming years. There is already a move to deliver parts of the curriculum electronically: medical students have their own well equipped computer lab, presided over by a computing officer whose console shows every screen on the room – surfers beware.

Plaza de la Indepencia, Concepción

Arco Universidad de Concepcion - The University Campus

There were some other aspects of teaching that I would have liked to have explored, but did not have the opportunity. For example, there were formal classes in English, and the students that I spoke with all spoke good English (otherwise there would have been precious little communication between us), but I did not come across any teaching that is conducted in English, and remain uncertain whether that would be desirable. The indigenous population of Chile is relatively small, unlike those in Bolivia or Peru, but Chileans come from a great range of ethnic backgrounds, and I would have liked know to what extent cultural differences would have a bearing on patient care, or whether this is given much consideration in the course. Finally, because of my own background as a non-clinical teacher and also because of the time of my visits, both of which were during the Chilean summer vacation, I was not able to sit in on any classes; nor was I able to speak to many clinicians or discuss the clinical part of the course.

My timetable left my quite a lot of free time between meetings, which I used to explore the city. Chile is the most developed country in South America, and Concepcion one of its most industrialised cities; nevertheless it seemed to me quite exotic. Some of the streets around the Plaza are barred to traffic, and in the evenings these are filled with musicians, hawkers and stalls offering everything from cherries or plums to copper plates depicting Salvador Allende, Che Guevara or even General Pinochet; or for a hundred pesos you can view the moon through a large telescope. I was content to sit in one of the outdoor cafés and watch the parade of passers-by. Talcahuano, the adjoining port, is Chile's largest naval base. Here one can see and visit the *Huascar*, a veteran ironclad war-ship that was built in Birkenhead for the Peruvian navy and used during the war with Chile (1879), when it was lured into a trap by several Chilean vessels and eventually taken. I was even more interested in the many sea-food restaurants in nearby Lenga, some of which were set up in government job-creation schemes – their *empanadas mariscos* (little pies containing shellfish in a sauce) were indescribably delicious. A lunch bill of four thousand pesos ($4,000.00) looks alarming, but is less than £4.

My overwhelming impression of Chile was of the warmth and kindness of the people. As I cleared customs in Santiago a cab driver grabbed my bag; when I explained I was just changing planes he let it go, shook my hand and welcomed me to Chile. This was typical – encounters in shops and restaurants were invariably friendly, and I was entertained and shown around not just by Carlos and Mario, but by many kind people, especially Sergio Mancinelli, the genial Dean of Science. He took me on several tours by car, and also invited me for a weekend at his small fruit farm in Tucapel, a village in the foothills of the Cordillera, where I was treated to an asado (large-sized barbecue). After dinner we took to the fields with a bottle of pisco (the Chilean national drink, a bit like grappa) to look at the stars – I could just about pick out the Southern Cross, but Carlos the freemason was able to name them all.

My visits were enormously enjoyable – I hope that my advice and the report I wrote were also of some use to my hosts. Some of the problems they face with their new curriculum, both financial and political (university politics, that is) are daunting. I would certainly recommend Chile as a destination for any student seeking an elective attachment in a fascinating, beautiful and friendly country. More staff visits are planned, in both directions. Will I go back? Certainly, if I'm invited – and, as my granny used to say, if I'm spared.

Student Life on Campus

Semester					
1	Introduction to medicine	Orientation and basic information	General and organic chemistry	General anatomy	English
2	Introduction to biomedical sciences 1	Orientation for medical studies	Introduction to medicine	General and topographical anatomy	Medical anthropology
3	Introduction to biomedical sciences 2	Evidence-based medicine			
4	Neuroscience	Endocrine system	Cardiovascular system	Respiratory system	Digestive system
5	Haematology	Renal system	Infection	Medical psychology	
6	Internal medicine 1	Surgery 1	General pathology		
7	Internal medicine 2		Public health		
8		Surgery 2	Public health	Medical law	
9	Obstetrics & gynaecology			Mental health	
10	Obstetrics & gynaecology	Paediatrics		Mental health	

Outline plan of the undergraduate medical course at the University of Concepcion

Pallative Care Experiences in the Pretoria Sungardens Hospice, South Africa.

CLAIRE McLEAN

Junior President

The Royal Medical Society of Edinburgh, 5/5 Bristo Square, EDINBURGH, EH8 9AL

The Pretoria Sungardens Hospice, South Africa was the beautiful location of my summer project. Saunders and Sykes (1993) define a Hospice as "a centre that would specialize in pain and symptom control in the terminal stages of disease but also provide an environment that would allow people to adjust emotionally and spiritually to their approaching death". The Sungardens Hospice seems to fill these criteria perfectly.

Set up in 1987, the hospice was originally a mobile unit providing palliative care in the community of Pretoria. Eventually an old convent building was offered for use as a ward before the E.G. Chapman Group donated the area of land the Hospice now occupies. Since then, as a result of hard fundraising, the Hospice staff have accumulated enough money to build a stunning complex from where they now plan to carry out their valuable work.

Situated in a tranquil garden, the hospice consists of a main building, an In-Patient Unit, a Chapel and a newly built block with shops and a library. It is from these small shops that the hospice earns its main income, around R140,000 a month, an amazing total considering that these shops are stocked chiefly by public donations.

It must be noted that the hospice services are provided free of charge for those who are unable to pay for this specialized care. Therefore, for the Hospice to continue successfully, they rely on donations of money from the public and patients' families. The sheer generosity of people and the ongoing determination of the staff to succeed amazed me.

In addition to the main hospice in Pretoria are two satellite hospices in the surrounding townships of Mamelodi and Atteridgeville. However, patient care is not restricted to the set hospice buildings. The majority of care takes place in the community with qualified nurses visiting and treating patients in their homes. When home care becomes too much for the patient and their family to cope with, admittance to the IPU in Pretoria allows for a period of respite or can provide a safe and comfortable environment for the person to die at peace, an event which is sadly often the case.

Day centres allow time for some patients to get out of their homes and enjoy the company of others, providing them with some degree of emotional support and companionship. In the townships and squatter camps the importance of the day centres to the patients is enormous. Not only are they socialising and receiving care, they are provided with clothing and two well balanced meals a day, basic needs taken for granted by those in better off circumstances.

The hospice works with three doctors who provide their services in the IPU as additional work to their normal responsibilities. A referral system is maintained by networking with the Hospitals, Clinics, Traditional Healers "Bossiedokters" (Bush doctors), Support Groups, GP's and Physiotherapists. This allows for the continuation of care for patients moving through the health care system.

The working day begins at 8am for most of the staff and almost immediately they are inundated with people making enquires about how they can get their relative/friend/self onto the long list of patients cared for by the hospice. On my first morning I travelled, along with three other staff, to the Inanda Club, Johannesburg to attend a conference being held by "Metropolitan" and the "South African Business Coalition for HIV/AIDS" (SABCOHA). The event's aim was to inform local organisations of the outcomes of a recent conference held to discuss plans for limiting the spread of HIV/AIDS throughout South Africa. The site states "the only true weapon in the fight against AIDS is information".

I spoke to a number of people about their views and beliefs of the subject and what I was told surprised me. Due to the different cultural backgrounds in South Africa, many belief systems exist, making the role of informing the general population of the risks of AIDS an extremely difficult task. One example recently documented in the media has been the belief that having sexual intercourse with a child will rid a person of the HIV virus. This shocking belief may unfortunately be leading to the further spread of the disease. Therefore, it is necessary to inform people of the true causes and of the best ways to avoid contracting HIV.

There is a well recognized problem with HIV/AIDS in sub-Saharan Africa. During my stay I met so many people with the condition that it is easy to believe whatever action is being taken is failing. In the Mamelodi satellite hospice the patients are composed of 60 HIV/AIDS and 30 Cancer sufferers.

For the vast majority of my stay, I worked with the Nurses that visit patients in their homes. These visits allowed for wound care, personal hygiene and medication administered to be carried out. However, for a large proportion of the time the visits centred on care, support and bereavement counselling. Witnessing death, dying, severely infected wounds and legal conflicts were other aspects that I encountered. It was a fantastic learning experience and although I felt physically and emotionally drained on a number of occasions, wherever possible I offered my assistance to anyone who needed it.

I was keen to do some work in the Townships and the hospice was only too happy to accommodate this. I worked with Ethel, a nurse of Nkosa origin, in the Mandela village, an informal squatter camp in Far East Mamelodi. The houses here are built from corrugated iron or thin brick walls entended with Zozos, small shed-like constructions. The buildings are small, dark, damp and freezing in the winter. People staying there have the bare minimum to survive on and many have large families living in one tiny room with basic sanitary facilities. Once again the care involved a great deal of bereavement counselling and advice giving.

On one visit I met four generations of women living together having lost all the males in their family with the most recent death due to AIDS. I came across a 27 year old male AIDS sufferer as he was warming himself over a tiny paraffin camping stove. His mother was having problems caring for him due to financial difficulties and although the Hospice had tried to arrange support for them nothing had yet arrived. They were living on next to nothing and it was amazing how helpless it is possible to feel when presented with a situation that you can do nothing to rectify.

There were however some other encouraging stories such as that of a mother whose unborn baby had been at risk of contracting the HIV infection from her at birth. The use of an anti-retroviral injection at birth had so far protected the baby from the virus and he was as yet showing no signs of disease.

Some other children had not been so fortunate and in the Mamelodi hospice I was working with two young boys: one of 2, the other 3 years old. Both had contracted HIV at birth from their mother who had since died as a result of this disease. The Grandmother was now caring for the

two boys. A strange phenomenon is taking place in South Africa. The older population, instead of becoming the ones that are cared for, are once again becoming the carers as a whole generation is dying and leaving young children without parents. The Sungardens Hospice allocated a day out every week for the children labelled "AIDS Orphans".

On one occasion I travelled with Dr Cameron to one of his clinics. We drove for two hours through the Moretele District to the rural village of Mathibestad. I was surprised to find a female Doctor from Aberdeen working in the clinic and it was strange to hear a Scottish accent. While in Mathibestad I took part in a training course being run for nurses in rural districts which I found extremely informative. I then worked with 5th year medical students on "Rural placement" from the University of Pretoria taking histories and examining new patients.

One patient I am sure never to forget was a young woman who had been having a long run of medical problems. After working through all her symptoms and then negotiating with her Bossiedokter it was decided that she should continue with both forms of treatment, traditional and modern. As she was getting up to leave she mentioned a slight pain in her ear which had been present on and off for around two years. The Doctors felt this was due to wax build up and decided to syringe it. I observed the process and everyone assumed this would have a typical outcome until, as the procedure went on, the student I had been working with noticed an insect antenna protruding from the women's ear! Additional doctors were called in for assistance and eventually a dead Cockroach was removed – I was later informed that you can expect to see cases like that a lot in Africa!

Over the course of my stay I was given many opportunities to further my learning. Dr Cameron invited me to The University of Pretoria Satellite campus to attend a lecture he was giving to 4th year medical students. He also took me on ward rounds in the IPU allowing me to practice some practical skills and while also teaching me signs and symptoms to watch out for. After each patient the doctor gave me an overview of the condition and an explanation for the observations we were making.

On a few occasions what I saw and heard shocked me. For example the Cheyne-Skokes breathing pattern, also known as the "death rattle", a sign of the last stages before death is a sound I had previously never heard. By the end of my visit however this had become a sound I recognised. On one occasion Dr Cameron and myself were some of the last people to see a female patient before she died. I then accompanied a Nurse to the woman's family to carry out the initial bereavement visit.

Seeing the pain and grief of patients before death and that of their families after death, was always a sad event. It demonstrated how important it is to remember that behind every illness there is a person, a family and a whole number of issues that may not be immediately obvious.

My stay in Pretoria was one of the most rewarding and valuable learning experiences I could have hoped for. This trip will influence my studies and also my future career path as I have now acquired skills and seen situations that simply would not have been possible otherwise.

In the hospice ethos they state that "coming to terms with death is as important as coming to terms with life and may provide profound insights into the purpose of living". I could not agree more.

My sincere thanks go out to the staff and patients at the Sungardens Hospice, Pretoria, South Africa.

Miss McLean received funding from the RMS Travel & Study Fund which is available to all members of the Royal Medical Society.
See www.royalmedical.co.uk for application forms.

North American Frontline Medical Care as Experienced on a Fifth Year Elective.

STEWART PATTMAN

Pre-Registration House Officer

Falkirk and District Royal Infirmary, Major's Loan, FALKIRK, FK1 5QE

When planning my elective I wished to experience Medicine in North America as it is often at the forefront of medical developments. Thiswould also allow me to make comparisons with our National Health Service. I arranged a four week attachment in cardiology in Toronto and a similar period at Columbia University Hospital in New York in the Medical Emergency Room. As an undergraduate, no formal USMLE qualifications were required for elective periods at these locations, and in order to work in America all doctors must have these qualifications. As I do not intend to obtain this qualification this was the only opportunity for me to experience the healthcare system in North America from the inside!

Toronto.

Happily I had arranged the elective prior to the SARS outbreak and by the time of my attachment the teaching of medical students had resumed. My placement in Toronto required a visa and a thorough medical examination including a chest X-ray and an HIV test. My reading had informed me that Toronto was a city of diverse cultures situated on Lake Ontario close to the American border. Indeed the hospital where I was working was located in an area populated by Greek immigrants. However the western lifestyle and diet meant that in 1996 cardiovascular disease was the primary cause of mortality, accounting for 37% of all deaths in Canada no matter the country of origin[1]. I was also aware that January in Toronto would be very cold (average temperature around -20°C), and this could perhaps precipitate angina in susceptible individuals.

In many ways Canada is similar to the UK. The healthcare system is funded by the government and permits free access to all Canadians at the point of use. The purchase of healthcare insurance is compulsory and this covers care, with a standard fee per prescription. Physicians are not employed by the government; they charge a fee per service, rather than being salaried as in the UK. There is also a very limited private sector of healthcare in Canada, as payment for services available under the state system is illegal. This results in some citizens crossing the American border to pay for services they desire.

A typical week in Toronto comprised of holding a clinic with patients on Mondays and Thursdays, assisting with exercise ECGs on Tuesdays, watching cardiac catheterizations on Wednesdays and at other times assisting in the Acute Coronary Care unit and the regular wards. The unit was situated in the equivalent of a district general hospital in the UK. There was an Emergency Room, ITU, theatres and facilities for angiograms; however interventional cardiology and coronary artery bypass grafts could not be performed at this hospital. The days were full and intense often starting at 7am with little time for lunch and ending at around 8pm. I found the system to be very efficient in managing patients as illustrated in the following case study.

Case Study.

'PJ' was an 85 year old gentleman who, although frail, had no significant medical history but was a previous smoker (40 pack years). When I saw him in the Emergency room he described three episodes of non-radiating left sided chest tightness which lasted about 10 minutes occurring, at rest, within the last 48 hours. His ECG showed mild ischaemic changes in the form of T wave inversion, his troponin levels were slightly elevated and he was admitted to a telemetry bed for further investigation. The next day he underwent an exercise ECG. This had to be stopped at B at Bruce Stage 2 when ST elevation developed in the chest leads, however PJ did not complain of any chest discomfort. The following morning an angiogram was performed. There was difficulty accessing the femoral artery on the right side and once this was achieved, a great deal of atherosclerosis in the right iliac artery was seen but interestingly claudication was denied. The angiogram was unable to be completed due to these heavily diseased vessels and at the angiographic rounds the next day he was transferred to another hospital where stent insertion was possible, and he was to undergo another angiogram using his radial artery as the access point.

Communication Theme.

PJ was scheduled to be followed up by Dr Bentley-Taylor, the physician to whom I was attached and his clinics took place outside the hospital in a private building. The healthcare system, paying physician per service, allowed greater flexibility in consulting time, compared with my previous experience within the NHS. Consults often took over 40 minutes for returning patients. This time allowed full discussion about results of investigations, medication review and therapeutic options. The extra time was also useful in new patient consultations, allowing doctor-patient rapport to be formed. New patients were often relatives of current patients and it was obvious that there was strong loyalty to a single physician under this system.

I witnessed excellent communication between specialties, both at angiographic rounds where the cardiologists discussed cases with the cardiothoracic surgeons and at multidisciplinary meetings involving family physicians. This allowed patients individual cases to be discussed informally and the optimum methods of management planned.

Pharmacology and Evidence-Based Medicine Theme.

All cardiology patients including the case of PJ were prescribed a statin. Statin usage has changed during my time in medical school and illustrates the importance of frequent review of new evidence. Data from the CARE trial showed that Pravastatin reduced plasma levels of CRP in a manner independent of LDL-C [2]. Hence there is evidence that statins have anti-inflammatory effects in addition to lipid lowering effects. CRP levels reflect systemic inflammation and indeed these levels have been shown to be a strong independent predictor of risk for future MI and stroke in healthy men and women[3]. Hence it is beneficial to reduce these levels even if lipid levels are within satisfactory limits.

There is also recent evidence to show that statins vary in their degrees of effectiveness. The REVERSAL trial showed that levels of atherosclerosis progression (measured using intravascular ultrasound, IVUS), and indeed CRP levels, were reduced more effectively with Atorvastatin than with Pravastatin[4]. This shows that choice of drug is also important in high risk individuals.

The recent increase in levels of statin prescriptions has been recognized in Canada and is associated with clinical trial evidence, clinical practice guidelines, policy changes and marketing initiatives[5]. In Britain, Simvastatin is currently the statin of choice.

Of course, it wasn't all work and I did manage to navigate my way around snow-bound Canada. The highlights were a trip to Niagara Falls which was partly frozen. I also made it to Quebec City, the heart of the French speaking area of Canada, with its European style architecture it had an almost alpine feel to the city. I visited during the winter festival and the city was packed with salopette sporting Americans admiring the ice sculptures.

New York.

My second four weeks was spent in the district of Washington Heights, in Manhattan, New York. I chose Emergency Medicine as I believed the range of experience and situations I would be exposed to would be valuable learning experiences.

I was working in a small community hospital, which was a branch of the larger Presbyterian Hospital. There were no facilities for Trauma patients in my allocated unit and it dealt with medical emergencies and minor injuries. I was based in an area of New York which was populated by a Hispanic community. This presented a range of new challenges. English was not spoken and an interpreter was required to obtain a history. Patients often did not have a family practitioner and so used the emergency department as a primary care centre. Some of those presenting often had multiple, unrelated problems such as a painful foot and chest pain. Health insurance which covers care and drug treatment is non-compulsory in the USA. For those who are uninsured, Medicaid covers the cost of treatment if the individual earns below a certain wage and Medicare covers those chronically unwell or elderly. Many employers provide health insurance for their staff. For those people who fall between these categories, the emergency room provides a safety net as all those attending the department are treated and the government is charged for their care.
As with my experience in Edinburgh, patients were triaged by nursing staff prior to awaiting examination by a doctor. My role in the department was to select appropriate patients after triaging and to take a history and examine them in order to present the case and the proposed management plan to the attending physician. The hospital, although small, had full imaging services including CT scanning and ITU and theatre facilities. When the case was non-urgent referral could be made to a clinic in the main hospital.

The hospital only had 12 bed spaces in the ER department and it often became quickly overcrowded, and the construction of an extension was underway. I found it a challenge to work under these conditions and the patients voiced the same view.

The USA shares a similar morbidity and mortality pattern to the UK, with cardiovascular disease, cancer and cerebrovascular disease being the top three causes of death[6]. The area in which I worked was relatively deprived compared to the rest of Manhattan and conditions associated with poverty such as pneumonia and asthma were prevalent.

Case study.

AD was an 84 year old lady, visiting relatives in New York from the Dominican Republic. She attended with her granddaughter with a complaint of a constant throbbing pain in her right ring and small finger. Her right arm was currently in a cast due to a fracture of her right wrist 6 weeks previously. She also had decreased extension in her ring finger. Her fingers were bruised and swollen, and sensation was intact. Medically she had hypertension and had a prosthetic right eye and a past history of a hysterectomy. Her granddaughter told me she was aware AD had an irregular heart beat but she was unsure as to how long this had been irregular. She was not taking any medications, and had no allergies. There was no family history of conditions, although her daughter died aged 40 from an MI. A repeat X-ray of the wrist showed no deformation of the wrist and good healing. However a routine ECG showed that she was in atrial fibrillation. She was at risk of an embolic event as no anticoagulants were being taken at the time. She was admitted to the hospital to be commenced on anticoagulant therapy.

Psychological Theme.

Although the presenting complaint was pain in the fingers it was difficult to establish if this was the primary concern. The inability to converse with AD in her native language meant I was unable to gauge the level of concern about the pain in her fingers. Her granddaughter appeared more concerned about her heart, especially as her mother had died from a heart attack at a young age. She could have encouraged AD to attend the hospital whilst in New York so she would receive a check-up. The open access policy of the emergency room means that this is the best method to seek help for what can be chronic problems. This safety net of the American system is vulnerable to exploitation. The family may have been keen for the patient to receive high quality care in the USA rather than in the Dominican Republic, essentially making AD a health tourist.

Confidentiality Theme.

An important aspect of care was patient confidentiality. Prior to commencing the attachment I had to undertake an open book test to allow me to receive my HIPAA (Health Insurance Portability and Accountability Act) qualification. This permitted me to work with patients and exchange information with other healthcare professionals. The policies on confidentiality covered electronic, verbal and printed mediums of communication and although I was familiar with the principles they were much more clearly stated in the USA than I had witnessed in the UK.

Washington Heights certainly wasn't a tourist friendly area of Manhattan, but a 30 minute subway ride took you to the Empire State building, Chrysler building and Grand Central Station. I managed to get to the top of the Empire State building on a snowy St. Patrick's Day, giving me a birds-eye view of the pseudo-Irish community of New York parading with bagpipes and pints of Guinness.

I also visited Boston and Washington for weekends and managed to take in the highlights of the Cheers bar in Boston and seeing George W Bush in a helicopter about to land at his house.

Reflections.

My experiences in both Canada and the USA illustrated the difference in allocation of resources between them and the UK. In the USA defensive practice means that more investigations are likely to be carried out, for example CT scans on headache patients. There is also more rapid access to such investigations than I have experienced in Scotland. In Toronto, almost all patients who reported new onset anginal pains would undergo an angiogram the same week following a clinic appointment.

One of the greatest challenges I faced during my time was the low daily temperatures in Toronto. The bulk of my daily commute to the hospital could be made by subway; however the 15 minute walk at either end required me to purchase some heavy duty outdoor wear! The heavy snowfall affected patients attending the clinics as many had to reschedule appointments due to the weather.

I have benefited from the elective in a variety of areas. I have broadened my knowledge base and I have also gained more skills in devising management plans, learned about new developments in interventional cardiology, appreciated the importance in constant review of evidence and learned new communication skills especially when taking histories and examining patients who speak a foreign language.

I feel this elective has furthered my career aim of working in hospital medicine. I was able to undertake procedures such as elective DC cardioversion, lumbar puncture and cannulation alongside history taking and examination. Staff were very eager to teach at both sites and as a result I would encourage students to consider these venues for electives.

I believe the exposure to different healthcare systems allowed me to evaluate the benefits and drawbacks of our own system. It also exposed me to different clinical methods and techniques which have augmented my range of skills. My elective has also been a social education as I was able to travel to Quebec, Montreal, Boston and Washington DC to experience their different cultures. Future work in America would require the USMLE qualification. I feel I have benefited from this opportunity and it has given me confidence and experience which will be useful in my future care of patients.

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A Report of an Elective Spent in the Department of Paediatrics, Victoria Hospital, South Africa.

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Choice of location / speciality

I chose to spend the 8 weeks of my elective in South Africa as it is a country which fascinates me in many ways. Known as the "Rainbow Nation" it is a country of diverse beauty; with many races, languages and cultures. Unfortunately there are also extreme inequalities in standard of living and quality of life, stemming from the long term effects of the apartheid era. The result is a population ranging from third world poverty to first world wealth and prosperity, literally on one another's doorstep. Healthcare mirrors the same disparity, with the private sector providing medical care of world-wide cutting edge standards, whilst the local state clinics and hospitals struggle with limited resources to provide care to a population rife with poverty and AIDS.

I chose to work at Victoria Hospital in Cape Town as it is a provincial state hospital affiliated with the University of Cape Town (UCT), but is a smaller 'peripheral' unit compared to the main teaching hospitals Groote Schuur (where the first heart transplant was performed) and Red Cross Children's Hospital. From this I hoped to gain more experience and continuity of care as part of a small team responsible for a designated paediatric ward. I chose paediatric medicine for two reasons. Firstly, it is a career path that interests me greatly, and secondly I wanted to observe the effects of HIV on the paediatric population. It is a very uncommon problem in the UK, as we have standard HIV prophylaxis treatment given to the low numbers of HIV positive mothers we do see. This lowers vertical transmission rates to about 2% (with or without elective caesarean deliveries).[1] I therefore encountered the widespread medical and social problems that result in these children, and how they are managed and treated – an experience I would never have come close to in the UK or other developed countries.

Healthcare in South Africa

President Nelson Mandela's first major policy announcement after election was that all health care for children under 6 years and for pregnant and lactating women would be free in the South African government's health service[2], and this was implemented in July 1994. In 1995 it was announced that South Africa was to get a new national health system, which will guarantee universal (and largely free) access to primary health care for "permanent residents", regardless of race, health profile, or income.[3]

HIV/AIDS is the most major health concern in South Africa today and its effects have been staggering:

- In the last 12 years, the HIV prevalence in South Africa rose from under 1% to way over 20%, according to statistics revealed by The United Nations Program on HIV & AIDS (UNAIDS).[4]
- National mortality rates for South African men aged between 20-40 years have increased by ›150% since 1998, and the mortality rate for women has risen even more (2003 RSA Aids conference[4]).
- An estimated 5,3 million South Africans were HIV positive by the end of 2002, according to the Department of Health's statistics, which were extrapolated from surveys at antenatal clinics.[4]
- In 2002, 15.7% of workers employed in public/private healthcare sectors were HIV positive and ›60% of children admitted to one tertiary hospital were HIV positive (majority ‹12 months old).[5]
- The HSRC conducted a national census-derived random sample survey of HIV prevalence using oral specimens from 8840 persons aged 2 years and above. Among 2-14 year olds seroprevalence was 5.6%, a rate which - extrapolated to all South African children - yields 670,000 HIV-infected.[6]
- UNAIDS statistics reveal that the percentage of hospital beds occupied due to AIDS, ranges from 26%-70% for adults and 26%-30 % for children. Only 1% of infected Africans receive antiretroviral (ARV) treatment, and many millions don't receive medication for opportunistic infections.[4]

The political stance of the South African government regarding the AIDS crisis was thrown into controversy when in early 2000, President Thabo Mbeki sent a letter to world leaders expressing his doubt that HIV was the exclusive cause of AIDS and arguing for a consideration of socioeconomic causes. Until April 2002, the international scientific community's interest in South African policies on AIDS was almost exclusively focused on the polemic raised by the president. In November 2003, whilst on my elective (and in the run-up to the forthcoming national elections), the long criticized government announced it was to make ARV drugs available to citizens suffering from AIDS or HIV. Health Minister Manto Tshabalala-Msimang told a press conference, "Government will as a matter of urgency start implementing a programme to provide ARV treatment in the public health sector."[7]

Narrative of Experience

Victoria Hospital has 23 HIV positive children on HAART (Highly active anti-retroviral therapy) that are seen on a monthly basis with their caregivers. This has been made possible by funding from the UK in the form of a study into compliance with complicated 3 drug regimens taken twice daily at weight-dependent dosages. Caregivers may be parents, relatives or workers in homes for children with chronic illness, and in most cases will be poorly educated and of low socioeconomic status. Accuracy with dosages and maintenance of regular intake is vital due to the development of drug resistance if not adhered to correctly. There is a weekly designated HIV clinic where all the patients on treatment are reviewed, their drug doses recalculated, fully examined, any problems recorded in detail and their drug diary compliance charts checked. It also provides an opportunity to provide on-going counselling and education. Although this is not an overtly complicated process, it is very time consuming (on average 1 hour per consultation). With only 3 doctors per clinic, the department is already near its limit with regards to manpower even with this relatively small number of patients, especially as treatment is life-long, and stopping is severely detrimental to its long-term efficacy. Therefore there are very strict criteria that have to be met before a child can be placed in the study, e.g. they have to be HIV Category C (the most advanced form), but more importantly their social circumstances have to be compatible with treatment i.e. a trustworthy adult has to take full-time responsibility for the administration of treatment, monthly attendance at clinic (which may often be a long, timely journey from home and involve the whole day) as well as general care and support. It is unsurprising that this is the major barrier in the majority of cases, but nonetheless the most frustrating and upsetting. One child I had experience with in particular, and who is close to the hearts of all the paediatric team, is a 3 year old little boy SM. SM is a twin B with an HIV negative twin sister. His mother died in May 2003 from AIDS related illness and his father is a fisherman who spends much of his time at sea. SM has category C HIV with severe developmental delay, and suffers from chronic lung disease (lymphoid interstitial pneumonia (LIP)) and recurrent gastroenteritis. He was an inpatient for my entire elective period with oropharyngeal

candidiasis, pneumocystis carinii pneumonia (PCP) and reactivated pulmonary tuberculosis (PTB). SM would benefit enormously from HAART and all the medical team would love to see him started. Unfortunately, the reliability of his father and aunt is not of high enough standard to ensure compliance. His family are once again being given a chance to prove their reliability: he has been discharged on TB medication, given in the community on a daily basis at specific TB clinics to which his caregivers will have to take him. The team is hoping that compliance on TB treatment will be an indication of their possible readiness to undertake HAART. There may be a possibility for admission into a care facility if the family again prove to be unreliable. In contrast, KT is another 3 year old little boy with category C HIV that was admitted for treatment of recurrent asymptomatic klebsiella UTIs. He has suffered from PTB with LIP, HIV encephalopathy and severe developmental delay. At 3 yrs he is unable to pull to stand or walk and has severe flexion deformities of his ankles. However, after 3 months of HAART his CD4 count has improved from 11% to 15% and he is currently in good health.

Seeing patients from such poor backgrounds was a humbling but frustrating experience. A standard history has to include questioning on basic needs so often taken for granted in developed countries, such as access to water and electricity. Nutrition is often poor, for example HIV positive mothers are still encouraged to breast feed their babies as the main causes of infant / childhood mortality are malnutrition and infectious diseases and therefore the advantages outweigh the risks of transmission and the risks of bottle feeding. In order to come to clinic, the patients travel in mini-bus 'taxis', vehicles of questionable road worthiness designed for 16 passengers but most often crammed full of many more. They may have to take up to 3 of these, and then wait for hours to be seen – there is no "appointment" time. Yet these circumstances are accepted by these people, who are so grateful for any help they receive. The medical staff are treated with the utmost reverence and respect and their advice never questioned. The frustration lies with a feeling of helplessness and inability to change their circumstances for the better. Also, when problems are missed or not dealt with correctly, the effects can be devastating. One such case involved a 15 month old little boy CF, who developed tuberculous meningitis (TBM). It was known that his grandmother, living in the same house, was on treatment with established TB for a month and yet, CF never received prophylaxis. This oversight led to a paediatric medical emergency as TBM is associated with high levels of morbidity and mortality. CF had neck stiffness of such severity that when 2 fingers were placed behind his head and lifted, his whole body rose from the bed like a board. He lay in a marked opisthotonus position with global severe hypertonia, hyperreflexia, was extremely irritable and poorly responsive. He had an associated communicating hydrocephalus, bilateral basal ganglia infarcts and a 6th nerve palsy. When started on TBM treatment and oral prednisolone, the medical team were doubtful as to how good his prognosis was. Thankfully, 2 months into his treatment his progress was quite remarkable and he was smiling, responsive and his tone markedly improved. The team is now hopeful he will make a full recovery. Although now rare in the UK, TB is a major problem in rural South Africa. BCG vaccinations are administered neonatally and children in close contact with adults with the disease should be placed on prophylactic treatment (child-to-child transmission is rare). If TB is suspected a TINE test (similar to Mantoux test) is performed, although these can be difficult to interpret. A 'reactive' test is very common as many people have had some exposure to the bacilli, and active disease is only indicated by a severe reaction. Occasionally positive results come as a surprise when tests are done routinely for in-patients. For example, RM, a 6 month old little boy who was admitted with an acute dehydrating gastroenteritis, fever and cough was found to have a highly positive TINE test and on chest x-ray showed features of a right middle lobe pneumonia and PTB. He also had features of foetal alcohol syndrome – another commonly seen problem in impoverished communities where alcohol consumption levels are high and educational standards poor.

Reflections

The paediatric departmental team at Victoria Hospital consists of a consultant, a medical officer (equivalent to a Specialist Registrar) and a rotating intern (JHO). The structure of the state health service is similar to the NHS although deficits in funding and staff are much more pronounced. After their intern year and one year of community service, newly qualified doctors are entitled to go into private practice or work overseas, and most chose this path. Although the doctors that do work in the state system are highly qualified and competent, they are restricted by a lack of resources. Often they are unable to prescribe the best drugs as they are too expensive or simply unavailable. The same limitations apply to clinical procedures, investigations and surgery. However there is an understanding from patients who are eternally grateful for any care they receive, and a positive attitude in the doctors who aim to do the best they can with the resources available to them. The result is a vibrant atmosphere of complete motivation and commitment to the practice of medicine that is unrivalled by any of my previous placements. Working with a small, friendly and totally dedicated team was a wonderful experience as I was really made to feel appreciated and part of the team, and was often thanked for my help. I was quickly seeing my own patients and treating them with supervision.

My time in South Africa has opened my eyes to the realities of third world medicine and has done wonders for my own self-confidence and self-belief, which has been one of my weaknesses. I was also able to identify gaps in my clinical knowledge, especially with such a different spectrum of presenting complaints and I feel I have gained invaluable experience, especially in the treatment of HIV in children. I feel very encouraged and hope to take a more involved approach to the rest of my medical studies and future work in order to gain as much knowledge and development of my clinical skills as possible. I also hope that I will be able to carry the same motivation, attitudes and priorities that I have experienced during my elective into my future career, some of which I would like to spend in Africa.

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The Most Isolated City in the World - An Elective Spent in Critical Care at the Royal Perth Hospital, Western Australia

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Going into my elective period I had a number of aims and objectives. As this was my last rotation as an undergraduate I felt it was important to complete my elective in an environment that would allow me to practice the clinical skills and knowledge that I have developed during the last 5 years. I saw this as an opportunity to prepare myself for my practice as a Junior House Officer and to experience healthcare delivery in a different setting. I also felt that as I entered my elective at the end of my undergraduate studies I would have a lot to offer to the teams working in the hospital I went to.

Choice of elective

I chose to complete my elective in Australia for a number of reasons. Firstly, I felt I would gain most experience in an English-speaking environment, as I do not speak any foreign languages sufficiently well to practice medicine. Secondly, as a western society I felt the health care system would be similar in many respects to that in the UK. Thus I would see similar medical problems to those of a Junior House Officer, which would be extremely useful in my fast-approaching finals. Finally Australia has always been a place I have wanted to visit having heard many favorable reports from friends and other doctors. Consequently I wished to experience its culture and way of life for myself. Although described in many travel books as the "most isolated capital city in the World," I decided to base myself in Perth, Western Australia in the specialties of General medicine and Intensive Care. Two main hospitals exist within Perth, the Royal Perth Hospital (RPH) and the Sir Charles Gardiner Hospital. Both of these are teaching hospitals attached to the University of Western Australia (UWA) offering elective places. The city seemed to offer a diverse range of culture and entertainment and there was plenty of scope for exploring outside of the city. In addition Western Australia has some of the best autumnal weather. I therefore felt this would be an ideal environment to achieve my objectives and was successful in my application to the RPH.

Choice of Specialties

I shared my elective time between the specialties of general medicine and intensive care. I particularly wanted to do general medicine as I was keen to extend my experience in a broad range of conditions and clinical areas. Furthermore during my clinical attachments I especially enjoyed acute and general medicine. Although intensive care was not initially one of my first choice specialties, I felt that time spent in ICU offered experience in the management and continued care of acutely unwell patients and their families. I hoped to learn more about the practical procedures carried out in the unit, such as central line insertion, ventilation and other commonly used interventions. I also thought this area would expose me to a broad spectrum of patients, with a wide range of medical and surgical problems at various stages of their management, which would prove useful in my work as a House Officer.

Preparations

In order to be allowed passage into Australia I had to apply for a business visa specifically designed for medical students completing electives. This involved amongst other things having a chest x-ray to rule out tuberculosis. In addition, UWA required evidence of immunity to tuberculosis, hepatitis B, rubella, measles, mumps and varicella zoster. On arrival in Perth testing for methycillin resistant staphylococcus aureus would also be required at the department of occupational health. This highlights the importance of the vertical theme of public health (*Vertical Themes are aspects of the Edinburgh curriculum that run through all 5 years Ed.)*, in ensuring my health and well-being, as well as that of my patients and colleagues. No further vaccinations were required for travel to Australia. In addition I acquired adequate travel insurance to cover any medical expenses incurred whilst away, as well as to guard against theft or change in travel arrangements. The UWA also advised me that it was sensible to ensure I had adequate indemnity cover for seeing patients in the hospital. Before leaving it was important to make sure that I had given my family and the medical faculty contact details so that I could be contacted should the need arise.

The Health Care System

I found the health care system in Australia to be very similar to that of the UK in terms of type of conditions seen and healthcare delivery. There were however some differences between the NHS and Australian systems. In Australia a publicly funded scheme called Medicare exists which entitles all residents to care at public hospitals like RPH. As in the UK, the resources of these public hospitals are stretched and therefore many patients have private health care insurance to supplement their Medicare. This means that they are able to attend hospitals such as the Sir Charles Gardiner which offer more comfortable surroundings, faster access to patient-requested surgeons and physicians, and the opportunity to have non-essential procedures performed. During my time in Australia I felt that both public and private patients received investigations such as computed tomography very quickly and more readily compared to the UK. The hospital ran efficiently but at times it could be seen that staff and resources were stretched to their limits, as is often the case in the UK.

The Hospital

RPH is an 855 bed hospital providing a comprehensive range of medical and surgical services for adults[1]. Areas of special expertise include: emergency services (RPH is the busiest trauma centre in Western Australia), coronary angioplasty, cardiothoracic surgery, stroke treatment, haematology, interventional neuro-radiology and burns[1]. RPH admits over 67,000 patients annually, with 44,000 attendances to the accidents and emergency department[1]. RPH is one of two large teaching hospitals in Western Australia, which together cater for a state-wide population of 1.8 million people[2]. 1.4 million people live in Perth, with the rest distributed throughout a state larger that most European countries[2]. Outlying rural hospitals are in place to cater for the rural communities. These however, are only able to offer basic services. Those patients requiring specialist help or input in their management were therefore transferred to the appropriate Perth-based hospital. The vast distances involved in transporting these patients meant that a flying doctors scheme was in operation for the retrieval and transport of these patients. I saw a number of patients who had been transported hundreds of kilometres to the hospital. This was a big difference from the UK, where distances to a hospital are no where near as vast. Whilst at RPH I was able to take part in the teaching program followed by the fifth year medical students at UWA. This involved attending tutorials, bed-side training sessions and some problem-based learning sessions. I found a major emphasis was placed on teaching at the hospital. There was a high level of involvement from the consultants, registrars and house officers in respect to undergraduate teaching, with medical students seen as an important part of the clinical team. Well-established post-graduate teaching programs were also in place.

Western Australia has a large number of indigenous aboriginals. These individuals frequently move from place to place in tribal and family groups and therefore often do not have a general practitioner. They also have minimal incomes and do not have private health insurance. As RPH was

a wholly public hospital a significant proportion of the patients attending were of aboriginal extraction. These patients often presented with poorly controlled medical conditions and their culture and beliefs often made their management an interesting challenge.

Clinical Experience

The medical and surgical problems seen at RPH were akin to those seen in Edinburgh. Common conditions seen in the general medicine setting included: diabetes, ischaemic heart disease, cerebrovascular disease, chronic obstructive pulmonary disease, pneumonia and deep vein thromboses with resultant pulmonary embolisms. In ICU a wide range of patients were seen with common presentations being multiple trauma following road traffic accidents, sepsis with multi-organ failure and as RPH was the neurology centre for Perth, I saw a large number of patients admitted following a subarachnoid haemorrhage. The ICU also received post-operative surgical patients with common procedures being coronary artery bypass grafting, abdominal aortic aneurysm repair and the removal of brain tumors. During my time in ICU I saw numerous procedures such as central line insertion and percutaneous tracheotomies.

Case Study One

During my time in general medicine I encountered the particularly interesting case of FB. FB was a 28 year old, aboriginal gentleman who presented to the emergency room of RPH with marked shortness of breath, high fever (39°C), severe headache and right, upper quadrant abdominal pain. On examination FB looked very unwell, was tachypnoeic with a respiratory rate of 30 breaths per minute, with evidence of intercostals in-drawing and use of accessory muscles of respiration. On auscultation of the chest there was reduced air entry bilaterally, with bilateral inspiratory and expiratory crackles.

Initial investigation revealed FB to be in acute renal failure with a creatinine of 300μmol/L and a urea of 70mmol/L. Liver function tests revealed increased levels of aspartate transaminase, alkaline phosphatase and alanine aminotranferase. A chest x-ray revealed multiple opacities throughout both lung fields.

Differentials considered were those of a viral/mycoplasmal/bacterial pneumonia, viral hepatitis. Delving further into FB's history revealed that he had recently been out hunting Kangaroos for his family and had prepared the animal carcasses. Amongst the doctors working at RPH this immediately raised the question of could this be Q-fever. Serology for this was therefore sent and a positive result was returned.

FB was immediately given oxygen, and support was instigated in the form of renal dialysis. On diagnosis of Q-fever, tetracycline therapy was started.

Q-Fever is caused by a rickettsia-like organism, *Coxiella Burnetti*[3,4,5]. It is transmitted by inhalation of contaminated dust or droplets from infected carcasses, as seen with FB. It was interesting to see this unusual condition, which I certainly would never have considered in my differential list. In 2002 Western Australia had 21 cases of Q-fever[1]. Q-fever is a notifiable disease in Australia and therefore it was important to notify the consultant in public health so that follow-up and monitoring of FB and his contacts could occur. Treatment of Q-fever can suppress symptoms and shorten the clinical course, but it does not always eradicate the infection. Hence it was vital that FB was adequately followed up to ensure that he did not go on to develop chronic Q-fever. In many of the aboriginal patients seen at RPH this can prove very difficult due to the way of life and the culture they follow. Aboriginal communities often move from place-to-place to find new food supplies and settlements. This makes follow-up and compliance with therapy very difficult at times. Good communication skills are paramount in this situation to ensure that the need for follow-up is explained, in a way that the person, who has often not attended formal education, can understand.

Case Study Two

Another thought-provoking case was that of GR, a 17-year old male admitted to ICU following a high-speed motor vehicle accident in which he was the front seat passenger. At the scene of the crash GR was GCS 4 and his extraction from the car was prolonged – taking 45 minutes. He arrived at the hospital still GSC 4 and was sedated. An endotracheal tube was passed and he was ventilated and transferred to ICU. Initial assessment and investigations revealed GR to have extensive injuries including a large subarachnoid haemorrhage, 2 broken ribs on the right with resultant pneumothorax and multiple fractures to his lower limbs. He went to theatre for evacuation of the subarachnoid haemorrhage and insertion of a ventricular drain, a chest drain and fixture of his fractures.

Over the next few days numerous therapies were tried to keep his intracranial pressure (ICP) low but on day 7 his ICP rose uncontrollably and his pupils became fixed and dilated. Staff felt that GR was brain dead and wanted to perform brain stem testing. GR had however been given Thiopentone during his management. This drug has a long half-life and therefore would take a number of days to be cleared from his body. Criteria for brain death could therefore not be met until sufficient time had passed for the drug to be eliminated. The ICU doctors therefore sort permission from GR's family to perform cerebral angiography. This was done and confirmed no cerebral blood flow. Treatment was withdrawn and GR passed away in the arms of his family.

This case had numerous learning points for me. It illustrates well the need for a good understanding of the pharmacology of the drugs we give to patients, particularly when dealing with brain death. We must be sure that the decision is absolutely correct. The case also made me think about the ethical issues surrounding the withdrawal of treatment. It was very interesting to see how the staff in the ICU worked as a team to support the family during this time. Good communication skills were required in breaking the bad news to the family, and providing adequate explanation of what needed to be done. Having been through this case I feel better equipped in dealing with these emotional issues and hope that with time I too will be able to help families through these difficult times.

Final Reflections

I really enjoyed my time at RPH. I was made to feel a part of the health care team and felt confidant in the clinical setting. I was also able to apply the key skills, such as IV cannulation and arterial blood sampling, and fundamental knowledge that I have acquired throughout my undergraduate training. Being able to shadow the UWA students was definitely beneficial. It allowed for revision of key topics and enabled me to see patients with other students watching so that we could then feed back to each other. This may prove very useful going in to my summer exams and I am pleased that I took time out to do this. I think my choice of elective destination suited me very well and I feel that I have achieved my objectives. Australia is a country I could see myself working in at some point in the future. The health care system is very similar, as are the clinical problems in general medicine, which was ideal I feel at this stage of my career. ICU reconfirmed for me the importance of multi-disciplinary care for patients and revised the important principles of caring for critically ill patients, something that will come in useful next year. My elective has taught me the importance of seeing as many patients as possible and that medicine is a career of life-long learning. As I near the end of my undergraduate training I hope to use my PRHO year to build confidence in the duties and responsibilities of a doctor, whilst striving to meet the expected standards in competence of care and conduct.

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Experiences and Observations from a Rural Hosiptal in Orange Free State, South Africa.

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During the summer of 2004, I travelled to South Africa to volunteer in Boitumelong Special Needs School. The school is located in the small township of Thaba 'Nchu which is near Bloemfontein in the Free State. It was not long before I introduced myself to the doctors practicing in the local hospital and eagerly asked if I could attend some of the clinics. The health care system in South Africa has a much more developed private sector than the UK. In every major city both a public and private hospital can be found. Typically, only white South Africans have health insurance and comprise the patient population of the private health care institutions. The public hospitals serve the black populace who cannot afford to pay for their medical treatment. Many of the small towns and townships in South Africa are populated by a majority of blacks and so are served by Government funded hospitals. Such hospitals often face staff, equipment and medication shortages and frequently become the primary choices of newly qualified medical students who are keen to spend their first year practicing under a great deal of pressure and in a variety of different medical specialties simultaneously. The doctors I spoke with found that they developed a greater depth and quality of medical knowledge and understanding of tertiary health care than their counterparts who applied to larger public and private hospitals.

In writing about my observations of health care in Thaba 'Nchu hospital, I hope to elucidate what a medical student can expect to experience and witness should they choose a rural South African public hospital as a location for their elective. The publicly funded hospital was established in the 1940s as a teaching hospital and has approximately 150 beds. During the day the doctors are expected to operate out-patient clinics and attend to patients on the wards. In addition to their daily duties each of the doctors will be designated the duty doctor commencing at 4pm on a different day of the week and be responsible for the health care of the entire patient hospital population and any additional individuals who arrive at the accident and emergency department until the following morning. During this time the doctor can be called to any ward in the hospital and be expected to attend to medical problems that exceed the capabilities of the nursing staff. The doctors would often move from A&E to the maternity ward, to the geriatric ward, to the neonatal ward before returning to A&E to perform a consultation with a new patient. If the doctor on-call requires additional assistance, a second doctor can be summoned from home. The doctor can request that the larger public hospital of Bloemfontein to admit seriously medically compromised patients although this is not to be relied upon. I met several exceptional doctors at Thaba 'Nchu hospital who were very driven to ensure that patients living in these rural surroundings (who could not afford health care) would not receive sub-standard treatment. Each one was always happy to explain a medical condition or treatment to myself or the junior doctors. There was one doctor at the hospital who openly announced to each new member of staff that his business in the town was his occupation and that medicine was simply his hobby!

During the time I spent in the hospital I did observe an embarrassing number of shortages in both medication and equipment. Supplies would arrive infrequently forcing the medical staff to utilize what was available to them in the best way they could. It was not uncommon for the doctors to consult textbooks not because they were unaware of the optimum treatment plan but because they were forced to grapple with alternative solutions due to limitations in the availability of specific medicines. Late one evening, the doctor on duty examined an individual's eye for fragments of glass without the aid of fluorescent dye. The doctor was unable to perform an adequate exam and reluctantly discharged the patient telling her to return if the pain persisted in the hope that by which time the necessary medical supplies would be delivered. In a separate incident, the doctors decided to make an incision in the infected hand of a man who had sustained a human bite in order to drain the pus. The team was faced by double equipment failure as both the machine used to occlude blood flow to extremities and an automatic sphygnomometer were broken. One of the assisting doctors was forced to manually put pressure on the brachial artery. Following a car wreck, a woman had sustained an extensive laceration to her head. I was sent to every department in the hospital in search of appropriate sutures. The doctor irrigated the wound using an i.v. saline drip and proceeded to suture with the largest needle I have ever seen due to the lack of availability of more appropriate supplies. The doctors did find the inadequate logistical management of hospital resources extremely frustrating especially when the patient was very medically compromised, but were adamant that they learned to be more medically ingenious as a consequence.

An article intending to provide an insight into rural South African health care would possess a very narrow focus were it not to mention HIV/AIDS. Until recently the Government would not acknowledge the scientific fact that HIV causes AIDS and prevented either from being written as a cause of patient mortality on death certificates. As a consequence, no reliable data on the prevalence of the infection exists. A group of Accident and Emergency consultants took it upon themselves to conduct a very unethical and statistically dubious survey of the patients that entered their department. The consultants sent blood samples for HIV testing without patient knowledge or consent and argued that this method of collection would yield results that could be applied to the general South African public since they believed A&E admission to be essentially random. They discovered that approximately one in three black people suffered from HIV or AIDS and one in ten whites were infected. Whilst the study is flawed is does provide a general impression that a large proportion of South African patients will have HIV or AIDS. Upon hearing these figures I turned down the offers the doctors extended to me of participating in invasive treatment. Despite this, I very nearly received a needle-stick injury whilst one doctor attempted to sedate a violent patient. Due to a short supply of sharps bins, the doctors have developed the practice of pushing used needles into the hospital beds until they can take it to a room with an appropriate disposal receptacle. It may be wise to consider how likely you are to sustain a needle-stick or other such invasive injury given the level of your medical abilities at the time of taking an elective if you intend to travel to a location where HIV is prevalent. One doctor informed me of the incredibly uncomfortable side-effects of the anti-retroviral treatment he was forced to take after a needle-stick injury and of the prolonged wait before knowing for certain if he had contracted the infection.

At the moment, the majority of the beds in Thaba 'Nchu hospital are occupied by AIDS victims. This is not abnormal for a rural South African hospital and is placing a huge drain on the public health system. It does not require an expert to calculate that the prolonged retention of patients on hospital wards is less cost-effective than administering anti-retrovirals which would enable HIV positive individuals to remain within the community for longer. It will take many years before any anti-retrovirals reach rural hospitals like Thaba 'Nchu and they will no doubt be in inadequate supply. Questions have been raised about the patient congruence to treatment plans given the nature of the side-effects of such medication. Many of the patients who contract TB kand who are treated will return time and time again with reactivation. Despite repeated

instructions by the doctors to complete the entire course of drugs, patients cease treatment when they become asymptomatic. Since anti-retrovirals are more efficacious in delaying onset of AIDS when taken early after diagnosis, some believe that anti-retrovirals will not have the desired impact on the health care budget.

Many of those at risk are aware of HIV/AIDS. They witness the death of friends, family, teachers or colleagues but continue to engage in high-risk behaviors. However, perhaps they are confused about mode of transmission, are in denial, suffer from youth immortality or expect to become infected. Unless the Government can develop improved ways of educating the public instead of erecting posters when many South Africans cannot read or stapling through condoms to attach them to medical referral forms, the crisis will continue. Anyone spending time in rural locations in South Africa should prepare themselves to observe the medical treatment of raped girls and even infants because desperation drives the perpetuation of misnomers about HIV/AIDS (such as having sex with a virgin will provide a cure).

I only observed the delivery of health care in one hospital in South Africa. Therefore, medical students cannot necessarily expect to share the same experiences. I am adamant that the quality of care and extent of medical stocks will be found to be greatly advanced in larger city public hospitals and as different again in private health care. The potential hazards of sustaining a needle-stick or other invasive injury with HIV contaminated blood is very real in locations such as South Africa where HIV/AIDS are so rife. Due to the misnomers about the disease and the nature of the culture, students can expect to witness the effects of extreme brutality and cruelty. However, despite the desperate shortages and great responsibility the majority of the doctors found practicing in Thaba 'Nchu to be extremely informative and phenomenally rewarding.

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Everything You Would Want to Know About Contracting a Tropical Disease

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Why travel? To broaden the mind. Undoubtedly travel also broadens your exposure to tropical diseases.

Given the current United Kingdom climate you will have to travel to get a tropical disease. This is easy given sufficient funds. You can be anywhere in the world within 36 hours. At any one time no less than about 300,000 people are airborne. The average intercontinental jet is airborne for about 17 hours out of 24. And this is a longer proportion of life than for many birds.

Do not prepare for your trip.
Do not take informed advice. Or if you do decide to take advice, present yourself a few day before departure so that most immunisations will not kick in to protect you from the moment you arrive.

Do not get immunised.

Do not consider the risks to which you might be exposed.

Do not consider that your itinerary might change.
Similarly do not consider the areas you might be passing through on the way to your destination.

Disregard malaria.
Do not take malarial prophylaxis. But if, by chance, you decide to take it, only start on arrival in the area concerned. That way weekly therapy will not have had a chance to achieve sufficiently high blood levels.
Take tablets spasmodically when there.
If you stay for any length of time realise that nothing has happened and thus the tablets cannot have been doing any good and therefore stop taking them. People do this! Alternatively if you get trivial side effects use this as an excuse for not taking the tablets. Take note of reports that some people have got malaria even though they were taking prophylaxis and thus stop taking your tablets - do not question whether these people who caught malaria were taking prophylaxis appropriately and regularly. And ignore the fact that their malaria would have been worse, possibly fatal, if they had not been on prophylactic tablets. Do not take tablets after return (taking tablets for at least four weeks after return is necessary to ensure that all liver based parasites have left the liver to be killed in the blood). Finally disregard any fever you may have after return – label it "flu" (when at the time of writing there is little genuine flu in the world). If febrile after return do not insist that your doctor requests a *specially stained* blood film (if necessary three films). A standard blood film will not diagnose malaria.

To acquire viral haemorrhagic fever visit at risk areas.
There are outbreaks of Ebola virus from time to time in central and east Africa. Lassa fever is found in sub-Saharan bush areas of central and west Africa. Visit bush huts where the multimammate rats run in the thatch and provide an aerosol of Lassa virus infected urine.

Make no effort to avoid gastroenteritis.
Of course it is perfectly possible to get gastroenteritis at home. In the UK we are relatively protected because sewage disposal is well regulated, commercial food preparation is well regulated and water has to be uncontaminated. If any of these three are defective then someone loses their job. This is not necessarily the case elsewhere in the developing world. Or particular note the local river may be the vehicle for sewage disposal upstream and provide the water supply downstream. Many of the bacterial tropical gastroenteritides are faecal-oral spread which, put bluntly, means eating or drinking faeces from animal or human sources. The commonest form of persistent traveller's diarrhoea, giardiasis, is usually spread by contaminated water. It is not just a tropical disease – the water supply in Leningrad, hardly a tropical area, has been infected. Try to drink water you know has not been purified. Use locally prepared ice and take every opportunity to slake your thirst from local rivers

Do not bother to be vaccinated against Typhoid and Paratyphoid fevers. Typhoid and paratyphoid fevers often present with fever with initial constipation (and not diarrhoea) because of dehydration. Both are strict human pathogens and thus you have to ingest human faeces or urine.

Ignore the risk of meningitis.
Fail to be vaccinated when visiting at risk areas.

Offer a home for worms.
Most gastrointestinal worms are acquired by ingestion of ova, cysts, or parasites. Gastrointestinal worms mature in the gut, mate, have babies (larvae), or lay eggs, or form cysts. Again contaminated food or water transmits infection. The overwhelming majority of infections are asymptomatic and, if diagnosed, the only symptom is horror. Swim in non-running water, usually in African lakes (Lake Malawi is a favourite for medical students) so that you can host schistosomiasis (Bilharzia). The parasite penetrates the skin, and may cause swimmers' itch and then spreads via the bloodstream with the male and female worm locked in perpetual copulation (they have a very sophisticated lifestyle!) and lay eggs in various internal organs (gut, liver or urinary tract). The eggs elicit a granulomatous reaction and which heals with fibrosis and bleeding. Low-grade one-off infections are unlikely to cause much problem (although if eggs are laid in crucial areas such as the spinal cord there may be devastating results). Diagnosis and therapy are relatively simple and medical students will be relieved to note that rectal snips are not routine these days. On return get worried about Schistosomiasis but be aware that, apart from Swimmers' itch or a febrile reaction to initial egg laying (Katayama fever), there will be no excretion of eggs for about six weeks after infection and the antibody tests will be only start to be positive after this time.

Tread on human stools.
Human hookworm penetrates the skin, usually of the feet, travels to the lungs, travels up through the lungs, dives into the oesophagus and then takes up residence in the gut where, if infection is severe, anaemia can result. The parasite is liberated with human stools and the cycle is repeated when you stand on an infected human stool. Morale? When visiting bush latrines always wear shoes.

Tread on dog stools.
Dog hookworm larvae cannot complete this interesting life cycle by entering human veins and lymphatics to reach the lungs, and the larvae wander in the skin causing an intensely irritating rash until the larvae die out.

Most worm infection would die out given time. An exception is strongyloides which has a similar life cycle to the human hookworm, except that their babies, the larvae, form in the gut and can burrow through the skin to cause rapidly moving urticarial tracks (cutaneous larvae currens) to repeatedly complete the life cycle in an individual human.

Risk hepatitis.
Do not bother to be vaccinated (or know you have antibodies against) hepatitis A. Hepatitis A is acquired by the faecal-oral route. Children who get infected are rarely very ill but adults who get infected in the tropics probably have a higher infecting dose and a more mature immune system and thus are more likely to be ill and jaundiced.

Have unprotected sex.
Have unprotected sex with partners whose risk factor(s) are uncertain. Statistically people are more likely to acquire hepatitis B (about 1 in 50 exposures) than HIV (about 1 in 300 exposures) by sexual contact with those infected with the relevant viruses. However all medical students should have been assessed for hepatitis B vaccination. Even if you avoid HIV and hepatitis B there are other sexually transmitted diseases.

Ignore persisting circular rashes.
Circular rashes with rolled edges with crusting or flaking, especially if they do not heal with antibiotics, may be fungal but Leishmaniasis is a possibility.

Do not bother to ensure that you are up to date with tetanus and polio vaccinations.
Ignore the fact that no vaccine, except perhaps yellow fever, gives you a (limited) guarantee of immunity.

Regard traffic as an irritation rather than a threat to your well being
You are more likely to be injured or die from road traffic accidents than tropical disease. In some developing countries the potholes in so-called roads are so frequent that the ride is smoother if the driver speeds so that the wheels do not bottom out with each pothole, providing risks for car occupants and pedestrians alike.

So after all that, your next holiday should be a doddle when looking for that unusual souvenir to bring back.

Peter David Handyside's Diploma as Senior President of the Royal Medical Society

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Introduction.

Over the last few years, the author of this article was fortunate to be offered and purchased two diplomas dating from the first half of the 19th century. Both were awarded to Peter David Handyside[1] (1808-81). He had graduated in medicine in 1831 with the Edinburgh M.D. degree. Shortly after he graduated, he pursued his anatomical studies, initially in Paris and then in Heidelberg under the distinguished physician Friedrich (or Frederick) Tiedemann (1781-1861). It is believed that his earlier apprenticeship under James Syme (1799-1870) had stimulated his interest in both Anatomy and Surgery. He was awarded the FRCS Edin. (Fellowship of the Royal College of Surgeons of Edinburgh) diploma in August of 1833, and was for most of the rest of his career a practising surgeon. The subject of his probationary essay was Osteo-aneurism, and this was dedicated to Tiedemann.[2] He commenced the teaching of Anatomy in Edinburgh in the summer of 1834, and was, on and off, for over 45 years a teacher of this subject at the Edinburgh Extra-mural School. He taught this subject until a few weeks before his death. While a medical student, he was elected Senior President of the Royal Medical Society during the Society's 92nd Session (1828-29). He had also been awarded the Harveian Society medal in 1827, and was in 1837 appointed Secretary of the Harveian Society. During the same year, he was elected to a Fellowship of the Royal Society of Edinburgh, while in 1871 he was elected President of the Medico-Chirurgical Society of Edinburgh *(Figures 1 and 2)*.[3]

In this article, I propose taking the opportunity of briefly drawing attention to Handyside's clinical and teaching career. It is also appropriate to draw attention to some of those that were present at the Society's Annual Dinner, and signed his Senior President's diploma. Many of the latter also achieved importance in the medical profession in later years. As will be seen, the lives of a number of these individuals were also closely interwoven in the events that were occurring in Edinburgh at about that time. The three Junior Presidents who each signed his diploma were Arthur Todd Holroyd (First Junior President[4]), Thomas Stone (Second Junior President[5]) and George Henry Heathcote (Third Junior President[6]). Both Handyside and Stone were also members of the Brown Square Medical and Surgical Society[7] during its brief existence in 1826-27. The Royal Medical Society's Annual Dinner took place on 28 November 1828, although there is no indication of where it occurred.

Left Figure 1: Photograph of Mr. Handyside in early middle age. By courtesy of Royal Medical Society.
Figure 2: Photograph of Mr. Handyside in late middle age. By courtesy of Royal College of Physicians of Edinburgh.

Handyside's career as a surgeon and teacher of Anatomy.

Initially, Handyside taught Anatomy at Number 4 Surgeons' Square, and emphasised its importance in Surgery. During the summer sessions, in addition to providing anatomical classes, he also gave a full course on Operative Surgery. In 1841, Handyside acquired the School of Anatomy at Number 1 Surgeons' Square, and lectured there for a few years on Systematic Surgery. He is said to have paid Mr John Lizars[8] in about 1839, £500 for his extensive surgical and pathological teaching collection. Handyside then set up in partnership with Henry Lonsdale[9] and James Spence (1812-82) there, and while he initially lectured exclusively on Surgery, for several years afterwards they shared the teaching of Anatomy. Handyside's move to Number 1 Surgeons' Square, in 1841, approximately coincided with his appointment to one of the Surgeoncies in the Infirmary. When Lonsdale succeeded Knox,[10] he purchased his anatomical collection for £900 on the understanding that Knox would not undertake any further anatomical teaching in Edinburgh. This tripartite alliance lasted until 1845, when Lonsdale returned to his native city of Carlisle. Knox's anatomical preparations were then transferred to Handyside.

When, in April 1842, James Miller (1812-64) succeeded Charles Bell (1774-1842) to the Systematic Surgery Chair in the University of Edinburgh, following the latter's sudden death, Handyside returned to the teaching of Anatomy, because he felt that the opportunities of his own advancement in Surgery in Edinburgh were likely to be limited. When Miller died in 1864, Mr. James Spence succeeded him. Handyside had been the unsuccessful candidate in his application for Bell's Chair in 1842, as well as for the Chair of General Pathology vacant after the resignation of John Thomson[11] (1765-1846) in 1842. He had also been the unsuccessful candidate for the Chair of Anatomy when John Goodsir[12] (1814-67) was appointed. The Appointment Committee indicated that it was felt that this post ought to be filled by someone who was prepared to devote *all of their time* to the duties of the Chair.

The appointment of Goodsir to succeed Alexander Monro *tertius* (1773-1859) as Professor of Anatomy in 1846, coincided with Handyside's move with John (later Sir John) Struthers (1823-99) as his Demonstrator to the Medical School at Number 11 Argyle Square.[13] Handyside taught Anatomy there during the winter of 1846-47, but then withdrew to devote all of his time to his clinical practice. From about 1848, Struthers took over all of the Anatomy teaching there, and to assist him in his teaching activities he purchased all of Handyside's anatomical and pathological preparations.

In 1849, the Government acquired all of the buildings around Argyle Square, and they were later demolished during the *third* phase of the building programme of the new Industrial Museum. The College of Surgeons was then forced, as a matter of urgency, to erect a new building, the *new* Surgeons' Hall, close to their Playfair Hall, and this then became the only building where an Extra-mural School could function. When Struthers was appointed to the Chair of Anatomy in Aberdeen in 1863, Handyside resumed the teaching of Anatomy at the new Surgeons' Hall, rather than at Argyle Square, and he was at that time the only extra-mural teacher of that discipline in Edinburgh. When Struthers moved to Aberdeen, he took with him both Handyside's and Knox's Museum Collections, and this required Handyside to establish yet another teaching collection for his own needs. In his surgical practice, he was recognised as an excellent operator. He had successfully amputated at the hip-joint in a patient with a malignant tumour of the femur, and had also performed the operation of ovariotomy, when this was not a popular procedure. He was also from its

Left Figure 3: Professor Robert Christison as a young man. By courtesy of Royal College of Physicians of Edinburgh.

Right Figure 4: Professor Robert Christison in old age. By courtesy of Royal College of Physicians of Edinburgh.

Figure 5: Painting of Professor James Syme. By Courtesy of Royal College of Surgeons of Edinburgh.

earliest days associated with the Edinburgh Medical Missionary Society, and was on its Committee or was one of its Board of Directors, in association with amongst others Mr. Benjamin Bell and Professor John Hutton Balfour, for over 40 years. Despite the opposition of the then Dean of the Faculty of Medicine, Professor Sir Robert Christison (1797-1882, see below), both Drs Handyside and Patrick (later Sir Patrick) Heron Watson[14] (1832-1908) consented to admit women to their ordinary classes of Anatomy and Surgery, respectively.

To complete the picture, it is appropriate to mention that his father, William Handyside, was a Writer to the Signet who practised in Edinburgh, while his brother was Lord Handyside, a Law Lord of the Edinburgh Bench. He was married, and left a widow and three daughters. Because of the many years that he was associated with the Extra-mural School and connected with the Royal Infirmary, large numbers of colleagues, students and grateful patients remembered him.

Guests at the Society's Annual Dinner.

One of the senior guests present at this Dinner was Robert Christison *(Figures 3 and 4)*,[15] who from 1822 until 1832 was the Regius Professor of Medical Jurisprudence in the University of Edinburgh. From 1832 until 1877 he held the Chair of Materia Medica and Therapeutics in the University of Edinburgh.[16] The second senior guest present was James Syme *(Figure 5)*. In 1833, he was to replace James Russell[17] (1754-1836) as Regius Professor of Clinical Surgery in the University of Edinburgh, and held this post until 1869, only one year before his death.[18] Both had signed the Society's Obligation of Membership in 1819, Syme on 8 January and Christison on 17 December of that year, and they were both elected Honorary Members of the Society in 1843. The other guest present was Dr. John Argyll Robertson (LRCS Edin. (i.e. Licentiate diploma of the Royal College of Surgeons of Edinburgh) 1819, M.D. Edin. 1819 and FRCS Edin. 1822). He had devoted most of his clinical career to ophthalmic surgery, and was elected President of the Royal College of Surgeons of Edinburgh in 1848. He died in 1857, and his son, Douglas, continued his work in this field.

The arrest of Burke and Hare.

November 1828 was also of considerable interest in Edinburgh, because it was on 1st November that the police visited William Burke's house and arrested him and his common-law wife Helen McDougal. It was believed that they were both involved in murder, in order to supply "subjects" to Dr. Robert Knox's anatomical classroom in the Extra-mural School. At 7 am on the following morning the police interviewed David Paterson, Knox's doorkeeper.[19] He showed them the body of Mrs. Docherty, who was still compressed into a tea-chest in the cellar of Dr. Knox's[20] School, at Number 10 Surgeons' Square, and later that day Mr. and Mrs. Hare were also arrested. They were also charged with the same crimes as Burke and Helen McDougal. It was believed that Mary Docherty had been murdered on the 31st October. It should be recalled that the Hall of the Royal Medical Society was at that time located next door to Knox's School, at Number 11 Surgeons' Square. On the following day, all of the prisoners were subjected to juridicial examination, while on the 10th, Burke and McDougal were further examined before the Sheriff. The case against Burke and Helen McDougal was entirely circumstantial until Hare turned King's evidence on 1st December.[21]

Dr. Alexander Black,[22] the police surgeon, had made a cursory examination of the body of Mrs. Docherty in the presence of Christison in the police office. Shortly afterwards, Robert Christison was called in by the police to conduct the formal post-mortem examination of Mrs. Docherty to try to establish the cause of her death. This was conducted in the police office in the presence of Mr. William Newbigging,[23] a well-respected surgeon in Edinburgh who from 1814-16 had been the President of the Royal College of Surgeons of Edinburgh.[24] Three of his sons became Presidents of the Royal Medical Society.[25] Both Christison and Newbigging had been appointed by the Crown to undertake the post-mortem examination. While Christison[26] was relatively inexperienced as a forensic pathologist, he undertook a meticulous examination of the body, but his findings were nevertheless inconclusive, although he believed that death was probably due to violence. Because of his doubts as to the exact cause of death, Christison also sought advice from Mr. Lawrence and Mr. Charles Bell, of London. Insufficient evidence was, however, available to support the prosecution's case against Burke. The Lord Advocate also sought the advice of Dr. William Pulteney Alison (1790-1859), who from 1820-21 had been Professor of Medical Jurisprudence. From 1821-42 he was Professor of Institutes of Medicine, and then from 1842-55 he was Professor of Medicine in the University of Edinburgh.

Thomas Stone, then Second Junior President, took various measurements of the heads of 22 criminals in the Edinburgh Jail, and at Bridewell, and presented his findings at an Extraordinary Meeting of the Society in 1828, and these were then published as an article.[27] During the latter part of 1828, when Burke and Hare were incarcerated in the Tolbooth prison, or during the early part of the following year, he made similar measurements of *their* heads. He also measured the Casts of the skulls of other "atrocious murderers," the heads of a selection of "notorious thieves" and those of a similar number of law-abiding citizens. His findings were initially presented before the Society, then published in the form of a lengthy article.[28] His findings were extremely important, in that they were counter to the long-held views of the phrenologists. Both Gall[29] and Spurzheim[30] and their followers had believed that the craniological measurements of both Burke and Hare and other prisoners allowed them to confirm their criminal propensities. The phrenologists staunchly defended their views.[31] The anatomical arguments presented by Stone alone should have been enough to destroy most of the information published in the *Phrenological Journal* concerning the phrenological analyses of famous and infamous individuals, but they clearly failed to convince the vast majority of Phrenology's adherents. In desperation Stone published his final article on the topic later in 1829.[32] Curiously, his Dissertation read before the Society in 1830, was on a completely different topic than the craniological measurements that he had previously presented to the Society. It was also quite different from the material that he submitted in his M.D. thesis, unlike the situation in the case of Handyside and Holroyd where their M.D. theses were on essentially the same topics as their Royal Medical Society Dissertations.

Additional observations on Dr. Thomas Stone.

Thomas Stone died in May 1854. According to his brief obituary notice,[33] while still a student he was a frequent contributor to *Blackwood's Magazine*. Within a few years of graduating, he was appointed Inspector of Hospitals to the British Auxiliary Legion of Spain, in the Carlist War, under the overall command of Sir George de Lacy Evans. Curiously, his name does not appear in the published list of the Staff of the Medical Department of the British Legion of Spain.[34] In later years, he published extensively in the *Psychological Journal* and in the *Polytechnic Review* of which he was both proprietor and editor. He was for some years Medical Superintendent of Wyke-house Asylum, Brentford, and then of Haydock-lodge, near Manchester.

It is also relevant to note that Dr. Holroyd was delegated by the Society, in 1830, to take a petition to Parliament relating to the sale to the anatomists of the bodies of many of the victims of Burke and Hare. According to Gray, it was believed that Holroyd would be able to use his influence with the Members of one or other House.[35] Lord Melville was approached, and he agreed to present this petition before the House of Lords. Warburton had formerly, in 1829, presented the first version of his Anatomy Bill before Parliament, but this was later withdrawn. His Bill was later amended in 1831, and became law in 1832.[36]

Other members of the Society who attended the Dinner.

Another member who attended the Dinner and signed the President's diploma was John Hutton Balfour.[37] He was elected First Junior President in 1830-31, and Third Junior President during the following year. He had obtained the LRCS Edin. in 1829, the M.D. Edin. in 1831,[38] and the FRCS Edin. diploma in 1833. While Balfour commenced in medical practice in Edinburgh shortly after he graduated, his principal interest was in Botany. He was elected a Fellow of the Royal Society of Edinburgh in 1835 and later of London, and was for many years an active Secretary of the Edinburgh Society. He was instrumental in the establishment of the Botanical Society of Edinburgh, in 1836, and in 1838, the Edinburgh Botanical Club. He gave a very successful series of lectures on Botany at the Extra-mural School in 1840, but only for a single year. In 1841 he was appointed Professor of Botany in Glasgow, then in 1845, he was appointed to the Chair of Medicine and Botany in the University of Edinburgh. Shortly after he was appointed to the Edinburgh Chair, he gave up clinical practice. He was also nominated Regius Keeper of the Edinburgh Botanical Garden, and became Queen's Botanist for Scotland. He was also for thirty years Dean of the Edinburgh Faculty of Medicine, retiring from this post, and from his Chair, in 1879.[39]

Another future botanist who was present at the Dinner was Hugo Falconer (1808-65). He was to become an extremely distinguished paleontologist and botanist. After graduating with an M.A. degree from the University of Aberdeen, he entered the University of Edinburgh to study medicine.[40] Immediately after he graduated with the M.D. degree in 1829, the East India Company accepted him as an Assistant Surgeon. Because he was under the age of 22, he spent a year in London where he studied botany, geology and Indian fossils. In 1832, he took charge of the Botanical Garden in Saháranpur. He was then able to explore the local hills, and discovered an enormous series of fossil mammals and reptiles there. This work was recognised by the Geological Society of London who awarded him their Wollaston Medal in 1837. He was also largely instrumental in introducing the growing of tea in India. He retired, due to ill health to England, and remained there from 1842-7. On his return to India he was appointed Superintendent of the Calcutta Botanical Garden as well as Professor of Botany in Calcutta Medical College. Much of his time, however, was spent in advising the Indian government on all aspects of its vegetation. He retired from the Indian Service in 1855, and returned to England, and resumed his palaeontological studies. He was elected F.R.S in 1845, and at the time of his death he was one of their Vice-Presidents, as well as Foreign Secretary of the Geological Society.[41]

One of the former Presidents of the Royal Medical Society who attended the Dinner was Daniel Ellis. He was Third Junior President when John Gordon[42] was Second Junior President in 1806-07, and on Gordon's (1786-1818) premature death in 1818 at the age of 32, Ellis wrote a posthumous biography of him.[43] Other members of the Society who subsequently became Presidents of the Society were Benjamin Bell (1802-43),[44] Evanus Bowen,[45] William Alexander Francis Browne (1805-85),[46] David Boswell Reid[47] and Andreas Wood.[48]

The other members of the Society who signed their names on Handyside's diploma were, in alphabetical order, Thomas Alfredus Barker,[49] Joannes G.M. Burt,[50] Joannes S. Bushnan,[51] Georgius G. Chester,[52] Gul. Henricus Duncan,[53] Matthew Baillie Gairdner,[54] Jas. C. Gordon,[55] Johannes Cornelius Heyning,[56] Edvardus Holmes,[57] Henricus Hulme,[58] Carolus Ibbotson, Henricus James,[59] Henricus Johnson,[60] Joannes MacKintosh, Gulielmus McGowan,[61] John Macrobin,[62] Gul. Reynolds,[63] Patricius Robertson,[64] Joannes Scott[65] and Jacobus Gregorius Vos.[66]

Handyside's Senior President's diploma dating from 1828 appears to be the earliest of its type so far located, although the Society has in its possession similar diplomas from the early 1840s. Equally, his Fellowship diploma of the Royal College of Surgeons of Edinburgh dating from 1833 is one of the earliest so far located.

Endnotes & References

[1] On his Royal Medical Society and FRCS Edin. diplomas, and for his M.D. Edin. thesis, he is referred to as *Petrus Davidus* Handyside. His M.D. thesis was entitled: "De Vasis Absorbentibus." The topic of his Royal Medical Society Dissertation was "On Absorbtion," and was read before the Society on 31 October 1828.

[2] Handyside, P.D. (1833). *A Probationary Essay on Osteo-Aneurism, or Aneurism of the Arterial Capillaries of Bone*; ...Edinburgh: Neill & Co. [29 pp., Dedicated to Frederick Tiedemann, Professor of Anatomy and Physiology in the University of Heidelberg]. The President of the College, John Campbell, signed his Fellowship diploma, and it was dated 20 August 1833. Campbell was President of the College in 1832-33, and his sister had earlier married Dr. John Barclay, the most distinguished of the Extra-mural teachers of Anatomy in Edinburgh during the first quarter of the nineteenth century.

[3] For further information on P.D. Handyside, see: Anon (1881). The late Dr Handyside. *Edinburgh Medical Journal* **26**, 949-56; Comrie, J. (1932). *History of Scottish Medicine*. 2 Volumes. Second Edition. London: Baillière, Tindall & Cox; Kaufman, M.H. (2003). *Medical education in Edinburgh during the eighteenth and nineteenth centuries*. Edinburgh: Royal College of Surgeons of Edinburgh. For his association with the Royal Medical Society over the years, see: Gray, J. (1952). *History of the Royal Medical Society 1737-1937*. Edinburgh: University Press.

[4] Arthur Todd Holroyd M.D. Edin. 1830. His M.D. thesis was entitled: "De Homeopathia." The topic of his Royal Medical Society Dissertation was "On the Homeopathic Doctrine," and was read before the Society on 5 February 1830.

[5] Thomas Stone M.D. Edin. 1831. His M.D. thesis was entitled: "De Cranio Humano." The topic of his Royal Medical Society Dissertation was "On the Development, Structure and Functions of the Brain," and was read before the Society on 1 January 1830.

[6] George Henry Heathcote M.D. Edin. 1829. His M.D. thesis was entitled: "De Stethoscopio." The topic of his Royal Medical Society Dissertation was "Sleep, Dreams, and Apparitions," and was, according to the date associated with his Dissertation, read before the Society on 28 November 1828.

[7] This Society was originally called the Brown Square Emulation Society. Its first meeting was held on 18 August 1826, and it functioned until May 1827.

[8] In 1831, he was appointed Professor of Surgery to the Royal College of Surgeons of Edinburgh.

[9] He was First Junior President in 1841-42, and Third Junior President in 1842-43, although he resigned and was replaced by Alleyne Maynard.

[10] Lonsdale had previously been Knox's assistant, and then his partner.

[11] Thomson was Second Junior President in 1791-92. He obtained the FRCS Edin. in 1793, and the M.D. Aberdeen in 1808. In addition to being the first holder of the Chair of Surgery of the Royal College of Surgeons of Edinburgh, from 1804-21, he was also the first holder of the Regius Chair of Military Surgery in the University of Edinburgh, from 1806-22. See: Kaufman, M.H. (2003). *The Regius Chair of Military Surgery in the University of Edinburgh, 1806-55*. Amsterdam: Rodopi B.V., 54-105.

[12] He was Senior President in 1841-42 and 1842-43, and elected a Fellow of the Royal Society of Edinburgh in 1842.

[13] This is where Dr. Knox had taught Anatomy for a few years after his move from Old Surgeons' Hall.

[14] Patrick Heron Watson was Senior President in 1853-54. M.D. Edin. 1853, FRCS Edin. 1855.

[15] Robert Christison M.D. Edin. 1819. His M.D. thesis was entitled: "De Febre Continua, quae nuper in hac urbe Epidemica fuit, ex exemplis apud Nosocomium Regium tractatis, deducta."

[16] Christison, in addition to being appointed Dean of the Faculty of Medicine, was President of the Royal College of Physicians of Edinburgh in 1839 and 1848. From 1868-73, he was President of the Royal Society of Edinburgh. For additional information, see: Anon (1882). Obituary: Sir Robert Christison, Bart., M.D., LL.D., D.C.L. *The Edinburgh Medical Journal* **27**, 852-63; Anon (1963-64). Christison, Sir Robert, M.D. (1797-1882). *Dictionary of National Biography* **4**, Oxford: Oxford University Press, 290-1.

[17] James Russell had been elected Senior President of the Society in 1780-81. He was awarded the FRCS Edin. in 1777, and was President of the Royal College of Surgeons of Edinburgh from 1796-97. He was the first Professor of Clinical Surgery in the University of Edinburgh. He was appointed in 1806, and resigned from this post in 1833.

[18] For additional information, see: Anon (1871). Obituary: James Syme. *The Edinburgh Medical Journal* **16**, 180-92.

[19] In court, he was referred to as the "Keeper of the Museum of Dr. Knox."

[20] Robert Knox's M.D. Edin. thesis of 1814 was entitled: "De Viribus Stimulantium."

[21] Anon (1829). The late horrible murders in Edinburgh, to obtain subjects for dissection. *Lancet* i, 424-31 [for a contemporary report of the trial, and sentence]; Roughead, W. (1921). *Burke and Hare*. Edinburgh: William Hodge & Co. Ltd.; Kaufman, M.H. (1997). Another look at Burke and Hare: the last day of Mary Paterson - a medical cover up? *Proceedings of the Royal College of Physicians of Edinburgh* **27**, 78-88.

[22] LRCS Edin. 1829, M.D. Edin. 1829.

[23] He had five sons, four of whom followed him into the medical profession. All five of his sons died young, only Patrick outliving him, and he was also elected President of the Royal College of Surgeons of Edinburgh from 1861-63. See: Kaufman, M.H. (2004). Sir William (1772-1852) and Patrick Newbigging (1813-1864) – father and son, who were both elected Presidents of the Royal College of Surgeons of Edinburgh. *Journal of Medical Biography* **12**, 189-95.

[24] Queen Victoria knighted him on her accession in 1838.

[25] Of his sons that studied medicine, Robert, was Third Junior President of the Society, but died in office during their 1832-33 Session. Patrick Small Keir Newbigging was First Junior President during their 1834-35 Session, while George Stewart Newbigging was Second Junior President during their 1837-38 Session. Sir William joined the Society in November 1792, and his oldest son, also William, joined the Society in December 1824.

[26] In 1871, Christison accepted a baronetcy on the recommendation of Mr. Gladstone.

[27] Stone, T. (1828). *The Evidences Against the System of Phrenology, being the substance of a paper read at an Extraordinary Meeting of the Royal Medical Society of Edinburgh*. Edinburgh: Maclachlan & Stewart, and Charles Smith; London: T. & G. Underwood; Glasgow: Robertson & Atkinson [109 pp.].

[28] Stone, T. (1829). *Observations on the phrenological development of Burke, Hare, and other atrocious murderers; measurements of the Heads of the most notorious thieves confined in the Edinburgh Jail and Bridewell, and of various individuals, English, Scotch, and Irish, presenting an extensive series of facts subversive of Phrenology. Read before the Royal Medical Society of Edinburgh*. Edinburgh: Robert Buchanan, William Hunter, John Stevenson; London: T. & G. Underwood; Glasgow: Robertson & Atkinson; Aberdeen: Alex. Brown & Co.; Dublin: J. Cuming [75 pp.].

[29] Dr. Franz Joseph Gall (1757-1828) was the founder of the "science" of Phrenology. His neuroanatomical research dated from the early 1790s.

[30] Dr. Johann Gaspar Spurzheim (1776-1832) was Gall's principal disciple, and acted as his secretary and assistant from 1804.

[31] Combe, G. (1829). *Answer to "Observations on the Phrenological Development of Burke, Hare, and other Atrocious Murderers, &c – By Thomas Stone, Esq.," &c*. Edinburgh: John Anderson, jun.; London: Simpkin & Marshall [16 pp.]. See also: Anon (1830). Article XIII. Mr Stone's evidences against Phrenology, 1828, and the *London Medical and Surgical Journal. The Phrenological Journal and Miscellany* **6**, issue 21, 140-3. See also: Combe, G. (1830). Article I. Answer to "Observations on the Phrenological Development of Burke, Hare, and other Atrocious Murderers, &c. By Thomas Stone, Esq.," By George Combe. *The Phrenological Journal and Miscellany* **6**, issue 21, 1-14.

[32] Stone, T. (1829). *A Rejoinder to the Answer of George Combe, Esq. to "Observations on the Phrenological Development of Burke, Hare, and other Atrocious Murderers."* Edinburgh: Robert Buchanan, William Hunter, John Stevenson; London: T. & G. Underwood; Glasgow: Robertson & Atkinson; Aberdeen: Alexander Brown & Co. [18 pp.].

[33] This was originally published in the *Medical Times and Gazette*, (1854, Volume 29, pp. 610-11), but later published almost unaltered in the *London and Provincial Medical Directory* of 1855 (see p. 669).

[34] Somerville, A. (1839). *History of the British Legion, and War in Spain, 1835-1837*. London: James Pattie, 663. However, this list is known to be incomplete; Kaufman, M.H. (2003). *Musket-ball and Sabre Injuries from the First Half of the Nineteenth Century*. Edinburgh: Royal College of Surgeons of Edinburgh, 30-43, see particularly Table 3, p. 36.

[35] See: Gray, *op. cit.* ref. 2, 149-50.

[36] Anon (1832). *A Collection of the Public general Statutes, passed in the Second and Third Year of the Reign of His Majesty King William the Fourth: Being the Second Session of the Tenth Parliament of the United Kingdom of Great Britain and Ireland. Cap. LXXV. An Act for Regulating Schools of Anatomy. 1st August 1832*. London: George Eyre & Andrew Spottiswoode, 713-18.

[37] Anon (1963-64). Balfour, John Hutton (1808-1884). *Dictionary of National Biography* **1**. Oxford: Oxford University Press, 976.

[38] His M.D. thesis was entitled: "De Strychnia".

[39] Balfour was succeeded in his Chair, in 1879, by Alexander Dickson, but as Professor of Botany. He, in turn, was succeeded by Dr. (later Sir) Isaac Bayley Balfour, son of John Hutton Balfour, in 1888.

[40] He obtained the LRCS Edin. diploma in 1828, and graduated with the M.D. Edin. degree in 1829.

[41] For additional information, see: Anon (1963-64). Falconer, Hugh (1808-1865). *Dictionary of National Biography* **6**. Oxford: Oxford University Press, 1022-25.

[42] John Gordon M.D. Edin. 1805, FRCS Edin. 1808.

[43] Ellis, D. (1823). *Memoir of the Life and Writings of John Gordon, M.D., F.R.S.E., late Lecturer on Anatomy and Physiology in Edinburgh* . Edinburgh: A. Constable & Company; London: Hurst, Robinson & Co.

[44] Vice M.M. Moriarty, resigned. Benjamin Bell was Third Junior President 1821-22, FRCS Edin. 1823.

[45] Senior President, 1829-30, M.D. Edin. 1831.

[46] Vice E. Lubbock, who had resigned. Browne was appointed Third Junior President 1826-27 and Third Junior President in 1827-28, although he resigned and was replaced by Robert Arrowsmith. Browne obtained the LRCS Edin. in 1826. Browne was elected a Vice-President of the Edinburgh Phrenological Society in December 1830, and was Medical Superintendent of Montrose Lunatic Asylum from 1834-38, then from 1838-57, that of Crichton Royal Institution.

[47] He was Senior President in 1826-27, M.D. Edin. 1830.

[48] He was Second Junior President in 1830-31, M.D. Edin. 1831.

[49] LRCS Edin. 1828, M.D. Edin. 1829.

[50] M.D. Edin. 1827.

[51] LRCS Edin. 1830.

[52] LRCS Edin. 1827, M.D. Edin. 1829.

[53] LRCS Edin. 1828, M.D. Edin. 1829.

[54] LRCS Edin. 1828, M.D. Edin. 1830, FRCS Edin. 1858.

[55] LRCS Edin. 1829, M.D. Edin. 1830.

[56] LRCS Edin. 1829, M.D. Edin. 1829.

[57] M.D. Edin. 1829.

[58] M.D. Edin. 1825.

[59] M.D. Edin. 1831.

[60] M.D. Edin. 1829.

[61] M.D. Edin. 1829.

[62] LRCS Edin. 1826.

[63] M.D. Edin. 1829.

[64] LRCS Edin. 1828, M.D. Edin. 1829.

[65] LRCS Edin. 1817, M.D. Edin. 1820.

[66] LRCS Edin. 1830, M.D. Edin. 1830.

Book Reviews

This edition, *TOM RUSS*, a fellow of the RMS reviews the latest book to be published by Professor Matthew Kaufman, while *JOHN SMITH*, a second year medical student reviews the new edition of a medical microbiology textbook often used by Edinburgh students.

Medical Teaching in Edinburgh during the 18th and 19th centuries

Matthew H. Kaufman
The Royal College Surgeons of Edinburgh 2003
ISBN 0950362085
RRP £25.00

Anyone who has been on one of Professor Kaufman's tours around the area surrounding the Society's rooms will know how much medical history is packed into these few hundred square metres (and can be squeezed into an hour scurrying around the streets). Professor Kaufman has set down all this knowledge and much more in his fascinating new book.

The book is extensively annotated showing the wide range of source material and is filled with many maps and illustrations which really make clear the location of all the important places referred to and how this part of Edinburgh has changed over the years.

At this time of great change for medicine in Edinburgh, with the Royal Infirmary having moved to new PFI premises in Little France, and the historic Faculty of Medicine being replaced after over 270 years existence by the 'College of Medicine and Veterinary Medicine', it is timely to be reminded of the development of the discipline in our city. If one looks back over the history of medicine in Edinburgh - the origins of the Faculty in the Netherlands, its establishment in Old College, the building of various hospitals including the first Royal Infirmary, the fallow years under Alexander Monro *Tertius* and the proliferation of extra-academical schools where, at times, it seemed that the real teaching of medicine and especially anatomy took place - one wonders what will be remembered of the 'new' Royal Infirmary and the College of Medicine and Veterinary Medicine at the end of the twenty-first century.

Half of the book's fifteen chapters describe the function of various buildings on Surgeons' Square (located behind Blackwell's on South Bridge) and the various extra-academical schools established both there and elsewhere in Edinburgh in competition with the Faculty of Medicine. The remaining chapters deal with the establishing of the Faculty in Old College in 1726, the Royal Infirmary (the hospital before the 'old' Royal), the dental hospital and school and the Henderson Trust's Phrenological Museum on Chambers Street. Of particular interest to members, both new and old, will be the chapter on the first hall of the Royal Medical Society at 11 Surgeons' Square. In reading about the Society in its first Hall, one can notice similarities with the 268th session - the free mixing of junior students with more senior students and their professors, the tradition of presenting dissertations before the Society and the Private Business sessions. However the differences are equally visible, including an annual subscription equivalent to over £200. Professor Kaufman includes an interesting analysis of students graduating with the M.D. degree and what proportion of these had joined the Royal Medical Society. It transpires that between 1770 and 1811, 6.6% of matriculated students graduated M.D. In the subset which had joined the RMS the proportion was 46.6%. A seven-fold increased pass rate! In the days of Vision 2000 this is certainly not the case.

Nowadays the training of doctors is highly regulated by the GMC and it seems hard to imagine such a vibrant extra-mural system of education as was the case in eighteenth and nineteenth century Edinburgh.

Medical Microbiology - Third Edition

Cedric A. Mims (Editor)
Paperback, 648 pages
Mosby 2003
ISBN 0723432597
RRP £36.99

For the last ten years, this book has been trusted as one of the most authoritative and influential texts in Medical Student learning. For years, students and teachers alike have come to trust its easy style, informative layout and excellent illustration. Indeed, having used the second edition as both a reference text for specific conditions and also an adjunct to learning the very basics of medical microbiology, it seemed that this fantastic text could get no better.

It was, therefore, with a sense of great intrigue that I peeled back the pages of the new edition. Could this possibly live up to the precedent set by its illustrious forerunner?

Within the bounds of 648 full colour, and immaculately presented pages, Mims et al continue their proud tradition of delivering important and often complex material in a simple and informative style. Replete with new and colourful diagrams, impressively detailed images and totally new chapters, this edition is actually a significant improvement, and many of the new features greatly improve the book's integration into a modern medical course. In particular, the new chapter addition of "Investigating Hospital Infection" shows that Professor Mims and his co-writers have their fingers on the proverbial pulse of modern medical microbiology. With current concerns over growing antibiotic resistance and the MRSA "superbug", realistic information such as that provided in this chapter is all the more important. Other useful features include the new Key Facts boxes at the end of each chapter, which concisely sum-up information in the preceding pages, and also the expanded MCQ-style questions to test your knowledge. The "Pathogen Parade" section is a concise and accessible overview of very many infections, parasites and organisms, listing their key characteristics, cardinal symptoms and how they should be treated.

I find myself wondering whether or not the book could be perfect. Unfortunately I must conclude that, despite a valiant effort, it is not quite so. Undoubtedly it is a superb resource and a phenomenally written textbook, but there is perhaps a single concern that I would raise. The book seems to shun the current trend in textbooks to give access to an updated website of the book. *Medical Microbiology* may be the most up-to-date resource available currently, but with research constantly pushing the boundaries of medical knowledge, one wonders how long this will remain so. An updated website would allow Mims' book to be the most current resource on paper and the internet and would thus prolong the life of the book. (NB: a resources website for the book does exist, but does not contribute extra material to the text itself).

In conclusion, I can recommend the third edition of *Medical Microbiology* as a vital resource to medical learning, and a generally interesting text about basic microbiological and immunological concepts. "Mims'" as it is lovingly known has long been the authority on microbiology, and with this marvellous third edition, its position on Medical Student bookshelves the world over seems assured.

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