

If I can see so far

Annual Oration: Royal Victoria Hospital Belfast, October 2004

JM Hood

The title of this oration is based upon a quotation from a letter which Sir Isaac Newton wrote to Robert Hooke, the well known 17th century scientist; and among other things, the inventor of the compound microscope. The letter was written in February 1675. "If I have seen further it is because I stand on the shoulders of those giants that have gone before".

I must thank the Medical Staff of the Royal Victoria Hospital for the great honour that they have bestowed upon me today in asking me to deliver the 2004 Oration. It is interesting to note that in 1852, when Dr Andrew George Malcolm was giving this oration he stated that the oration was "an old established custom". From the first Oration in 1827 until 1883 the opening address probably took the form of the 1st clinical lecture of the teaching year. In 1883 it is recorded in the Medical Staff Minutes of the Belfast Royal Hospital that there should be "an introductory address" given annually, and so the tradition continues to this day.

"The Science of Medicine has for its object the emancipation from disease of those who are afflicted by it, and the preservation of the health of those who possess it".

This is not a definition of medical practice obtained from a recent textbook but rather that of the ancient Indian physician Sush Mita, writing sometime around 500-600AD. I think that the second part of the definition is the most remarkable, as it clearly alludes to the role of medicine in preventing disease as well as its role in treatment.

Over the years many have argued as to whether surgery is an art or a science. I think that the answer cannot be better stated than in the words of St Francis of Assisi (1181-1226), who wrote many years ago:

"He who works with his hands is a labourer.
He who works with his hands and his head is a craftsman.
He who works with his hands, his head and his heart is an artist".

I suggest to you today that the last line denotes the essential requirements for a surgeon. All three components are necessary attributes for a successful surgeon ie manual dexterity, intellectual ability and compassion for ones fellow man. Students present who wish to pursue a surgical career would do well to remember this, and to work towards achieving expertise in all three areas. Manual dexterity comes with practice, knowledge from learning, but compassion comes from within.

One other wise piece of advice for us all, and for the students in particular, comes from a famous medical author. One not best known for his textbooks, but rather his novels none other than Sir Arthur Conan Doyle. In one of his Sherlock Holmes novels, "A Study in Scarlet" he writes:

"You see. I consider that a man's brain originally is like a little empty attic and you have to stock it with furniture as you choose. A fool takes in all lumber of every sort that he comes across, so that the knowledge which might be useful to him gets crowded out, or at best is jumbled up with a lot of other things so that he has difficulty in laying his hands upon it. Now the skilful workman is very careful indeed as to what he takes into his brain attic."

This morning I want to reflect upon some of our predecessors who have made significant contributions to our current knowledge in the medical field. I would liken this knowledge to an as yet incomplete jigsaw to which many have contributed pieces both large and small but all fit together – eventually – to give us a more complete picture.

As yet, many parts are missing, and it is for you, the students and young doctors in the audience, to contribute further pieces to our puzzle.

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Clearly it is impossible to mention all who have made contributions to our jigsaw, so I claim the orator's privilege to single out a number of people who in my opinion have made significant advances. Some of these are well known and some not so. Many are international figures and some have associations with our Medical School and in particular the Royal Victoria Hospital. In making my selections I have been interested not only in the contribution that these individuals have made to medical progress, but also in looking at what personal attributes they had, apart of course, from the ability to have original ideas, or in modern parlance "to think outside the box".

I would like to focus on the branches of surgery with which my professional career has been most closely associated, namely vascular and transplantation surgery.

The transformation of a part of one individual into another has been a recurring theme throughout lore and literature since the earliest time and an abundance of examples exist. To name but a few, snakes coiled from Medusas' scalp: those who caught her glance turned to stone. Homer sang of the Sailors of Ulysses transmogrified into swine by the enchantress Circe. Indeed, his chimera, part goat, part lion, and part dragon, has become a modern symbol of clinical transplantation.

In the Bible Christ restored the ear of a servant of the High Priest following its amputation by an angry Simon Peter. St Peter having witnessed this accomplishment, was later able to replace the breasts of St Agatha which had been pulled off with tongs during torture.

Probably the best known early record of transplantation is that attributed to the third century twin brothers Cosmas and Damien. They were born in Cilicia in Asia Minor. They were Christians who performed great deeds of charity never accepting a fee for their services. An elderly servant of the church who was to become St Justinian, developed a gangrenous leg. Following a long prayer to one of his patrons, Justinian fell asleep, and Cosmas and Damien appeared before him. The brothers amputated his diseased leg and thereupon remarked that a Moorish slave had been buried on the same day at St Peter's cemetery. Cosmas and Damien went to the slave's grave, exhumed the body, and amputated the dead man's leg. They then reattached it to their patient's stump. When Justinian awoke he had one black and one white leg. Unsure of whether or not he had been dreaming, Justinian went to the

cemetery and there next to the slave lay his diseased white leg. There are many paintings of this feat. This particular one hangs in the Prado Museum in Madrid. Cosmas and Damien died martyrs, and are widely regarded today as patron saints of transplantation. (Illustration 1).



Figure 1

Vascular Surgery now has an increasingly wide remit, but a very important area concerns the repair of aneurysms. Antyllus was a pioneering Greek surgeon living in the late 3rd and early 4th century. He wrote extensively on the pathology and surgical treatment of aneurysms. The following is a quotation from his writings sorted by Oribasus –

“There are two kinds of aneurysms. In the first the artery has undergone a local dilatation; in the second the artery has been ruptured. The aneurysms that are due to dilatation are longer than the others. The aneurysms caused by rupture are more rounded. To refuse to treat any aneurysm, as the ancient surgeons advised, is unwise; but it is also dangerous to operate upon all of them. We should refuse, therefore, to treat aneurysms which are situated in the axilla, in the groin, and in the neck, by reason of the volume of the vessels and the impossibility and danger of isolating and tying them. We should not touch an aneurysm of large volume even when it is situated in some other part of the body.”

Antyllus went on to describe ligation of the artery both proximal and distal to the aneurysm, followed by opening the sac and evacuating the contents. This method of treating aneurysms was forgotten for centuries until, as you will hear later in this oration, it was “rediscovered” by Rudolph Matas in 1888.

For many centuries vascular surgery made little or no progress until another of the early surgical “Giants” appeared on the scene. I allude to Ambrose Paré (1510-90). In 1536 he joined the French Infantry and his first campaign was in the same year in Northern Italy against Charles V. The Battle of Chateau de Villane was especially fierce, and there were so many casualties that Paré ran out of supplies of oil which, at that time was boiled and applied to wounds, especially amputation stumps. He therefore had to develop an alternative. He described the circumstance of his discovery thus. “I was at that time a fresh-water surgeon, since I had not yet seen treated, wounds made by firearms. It is true I had read Chapter 8 of Jean de Vigo’s book. *Wounds in General*, in which it is stated that wounds made by firearms are poisoned by the gun powder. For their cure he advised cauterization with oil of elders mixed with a little theriac. To not fail, this oil must be applied boiling, even though this would cause the wounded extreme pain. I wished to know how the other Surgeons did their first dressings, which was to apply the oil as hot as possible. So I took heart to do as they did. Finally my oil was exhausted and I was forced to apply instead a digestive made of egg yolk, rose oil and turpentine. That night I could not sleep easily, thinking that by failure of cauterizing, I would find the wounded in whom I had failed to put the oil, dead of poisoning. This made me get up early in the morning to visit them. Then, beyond my hope, I found those on whom I had used the digestive medication, feeling little pain in their wounds, without inflammation and swelling, having rested well through the night. The others on whom I had used the oil, I found feverish, with great pain, swelling and inflammation around their wounds. Then I resolved never again to so cruelly burn the poor wounded by gunshot”.

His important book *Dix Livres de Cherugu* was published in 1564, making three very important points. Firstly the abandonment of hot cautery, secondly the role of ligation of bleeding vessels in deep wounds and thirdly the benefit of ligating vessels during the course of an amputation, as opposed to the old practice of applying a red hot cautery iron to an amputation stump.

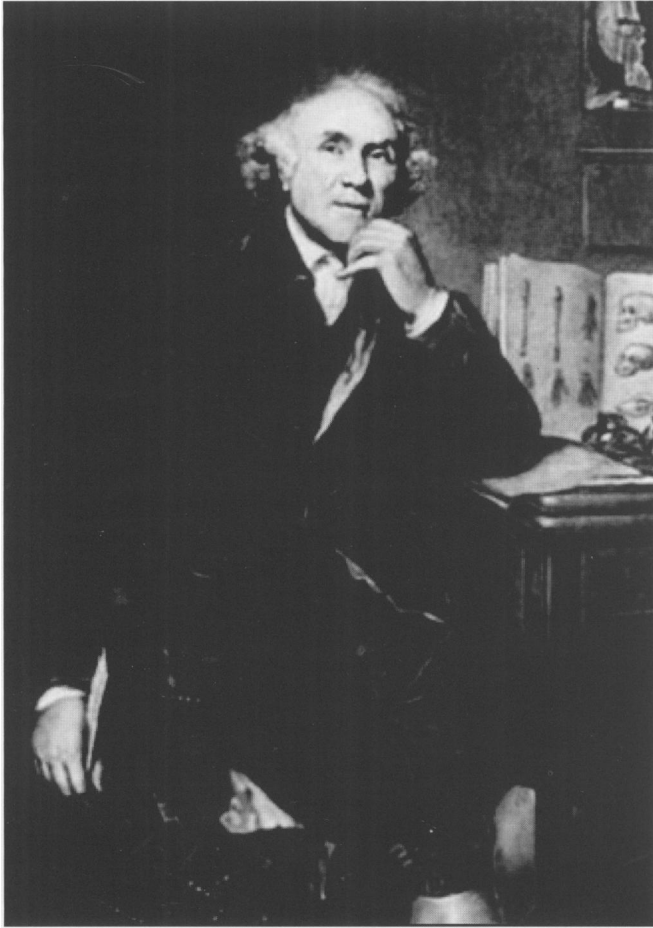
Paré was a good anatomist and by far the greatest surgeon of his time. He was the friend of four successive kings of France, Henry II, Francis II, Charles IX and Henry III, and he was said to be the only Protestant in Paris to survive the St Bartholomew’s Day Massacre on August 24th 1572. This was attributed to the direct actions of the king.

Any consideration of the history of Vascular Surgery would be very incomplete without a mention of the two famous Hunter brothers. Their father was a Scottish farmer who farmed at Long Calderwood near East Kilbride. The elder brother William was born in 1718. He received a good classical education and went to study medicine at Edinburgh University.

William Hunter taught anatomy at various locations, culminating in the establishment of the famous Great Windmill Street School of Anatomy (near Covent Garden). He was a passionate and gifted teacher believing that a man could do far more for the public by teaching his art than by practicing it. He pointed out that only the few individuals for whom he could care benefited from his practice, but “the influence of a teacher extends itself to the whole nation and descends to posterity”.

As well as teaching, William Hunter had a particular interest in aneurysms, publishing two major works on the subject, the first in 1757 and the second in 1761. In the latter publication he was critical of the attempts at treatment of aneurysms at this time and wrote “Ignorance is rash and fearless: knowledge is always cautious and circumspect. The first, amidst much mischief, boasts now and then a random cure: the other, though active when there is a prospect of success, is frequently restrained by the fear of doing harm”. This, I would suggest, is another piece of excellent advice far ahead of its time, and still very apposite to the practicing surgeon today.

John Hunter was born 10 years after his brother William and had a very different childhood. He demonstrated no interest in learning and by all accounts his childhood was rather wild. In 1748 at age 20, he went to join his brother in London working in his anatomy school. Here he soon found his vocation showing exceptional ability. Whilst William was mainly an anatomist and teacher, John became a surgeon, and he is known today for putting surgery on a scientific basis as he carried out much research. He is best known for his contribution to the surgical treatment of aneurysms and in particular



John Hunter (1728 - 1793)

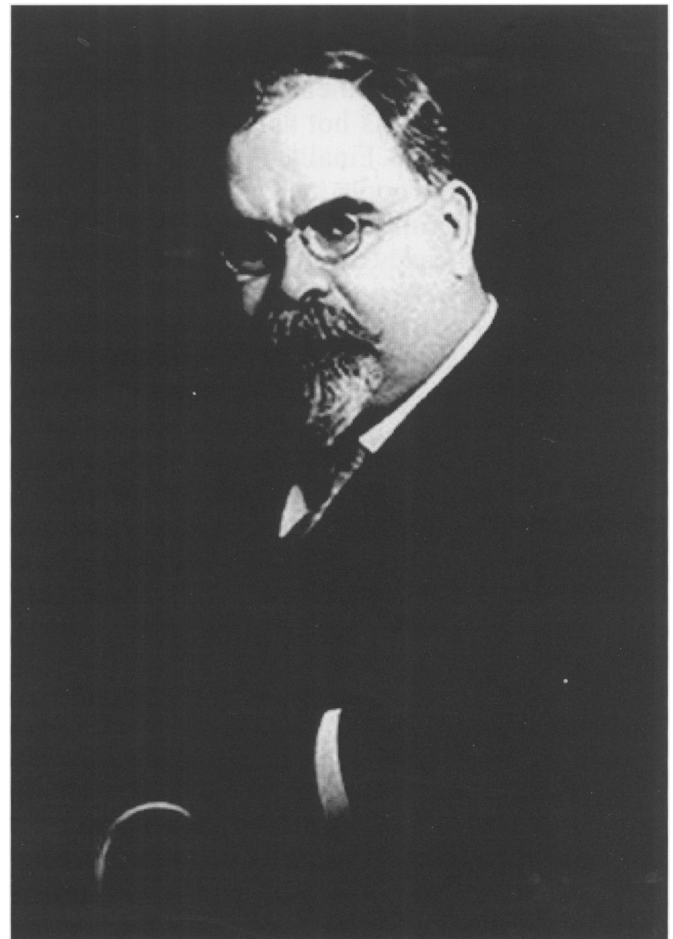
popliteal aneurysms. His most famous patient "A.B." was a 45 year old London coachman who begged John Hunter not to amputate his leg and to do anything he could to save it so that he could continue to earn his living. Over the previous 3 years AB had developed an enlarging pulsatile swelling in his left popliteal fossa. In December 1785, having sedated AB with laudanum, he operated, placing no less than 4 ligatures on the artery well proximal to the aneurysm itself. This proved effective. AB recovered only to die of pneumonia about 1 year later. The operation was recorded for posterity by Hunter's brother-in-law Everard Home, who was himself a surgeon.

Hunter later modified the operation using only 1 proximal ligature. Over the next couple of years he went on to perform 4 further operations for popliteal aneurysm of which the first died, but the other 3 survived without limb loss. After this he handed his aneurysm patients over to his brother-in-law Everard Home, who performed many successful operations on popliteal and brachial aneurysms, using what became known as the Hunterian method.

Up until the latter half of the 19th Century all of the major advances in vascular surgery came from Europe, but on the 11th September 1860 a child was born on a remote Louisiana cotton plantation called Bonnet Carre. This child was named Rudolph Matas and he was destined to make a major contribution to vascular surgery. His parents had emigrated from Europe four years earlier, his father, Narciso, obtained a degree in pharmacy from New Orleans College of Medicine in 1858, and in the following year a medical degree. His first post was as a doctor to the cotton plantation on which Rudolph was born

Rudolph's early education was in many locations including Paris, Barcelona, New Orleans and Brownsville Texas. He entered the University of Louisiana (Illustration 3), later Tulane University, and graduated in medicine in 1880. Following this he worked in Charity Hospital New Orleans.

In January of 1888 a young 26 year old plantation worker, Manuel Harris was out shooting rabbits with some friends. He sustained an accidental shotgun wound to his left upper arm. Little could he have known that the treatment of this injury would lead



Rudolph Matas (1860 - 1957)

to surgical advances which would change the field of vascular surgery for ever. Two weeks after the injury Manuel noticed a pulsatile swelling on the medial aspect of his left upper arm. He attended Charity Hospital where he came under the care of Rudolph Matas. In a situation very reminiscent of John Hunter's patient, the coachman, with a popliteal aneurysm almost 100 years earlier, Manuel impressed upon Matas how important his arm was to him otherwise he would not be able to earn a living. Matas therefore tried to thrombose the aneurysm with both digital compression and compression by means of an Esmarch tourniquet. All failed, and so he operated on Manuel on 23rd April 1888 and performed the standard Hunterian operation of proximal ligation. Initially this seemed successful but within 48 hours the pulsation in the aneurysm returned. Matas re-operated on 2nd May when he performed both proximal and distal ligation, plus opening of the aneurysmal sac to occlude any branches which were back bleeding into it.

Thus the operation, now known as endoaneurysmorrhaphy, was rediscovered some 15 centuries after Antyllus's original description.

In 1895 Matas was appointed Chief of the Department of Surgery at Tulane University, a post which he held until his retirement in 1927.

In 1923 Matas was the first to successfully ligate an abdominal aortic aneurysm.

In 1949 at the age of 80 years, he reported his personal experience of treating various types of aneurysm to the American Surgical Society. He had performed 620 operations of which 101 were by the technique of endoaneurysmorrhaphy. The most remarkable aspect of his experience was that these operations were performed with a mortality rate of less than 5%. He also claimed that none of the procedures resulted in gangrene. Vascular surgeons of today would be proud of these results.

Matas was a man of great intellect and sensitivity and in one of his more famous lectures delivered in 1915 entitled "The Soul of the Surgeon", he warned of those who would disgrace their profession for money and fame, and of others who would allow their vanity to eclipse reason and morality. I'm sure you will agree that these are thoughts entirely appropriate to the 21st century.

Matas died at the grand old age of 97 years on 23rd September 1957.

Meanwhile during the late 18th and 19th century the City of Belfast was growing rapidly driven by the industrial revolution, and in particular the role

the city played in the production of linen. With the increasing population, so the need for a hospital grew, hence in 1797 in Factory Row "The Belfast Dispensary and Fever Hospital" opened. This was the precursor of the Royal Victoria Hospital of today. In 1815 the need for expansion of the hospital was accepted, and so the foundation stone for a new hospital was laid in Frederick Street. Two years later on 1st August. 1817 the Belfast General Hospital opened. In 1875 the Royal Charter was granted, and the hospital became the Royal Belfast Hospital, only to change its name again in 1899 to the Royal Victoria Hospital Belfast. On 27th July 1903 the new hospital on the Grosvenor Road site was opened by King Edward VII and Queen Alexandra. Most recently, the first phase of the major redevelopment of the hospital was opened by HRH Prince Charles on 2nd September 2003.

The 19th century saw some of the greatest advances in surgery of any century either before or since. Among these advances was the introduction of anaesthesia. The first use of the word anaesthesia is attributed to Oliver Wendell Holmes of Boston (1809-1894). In a letter to William Morton dated 21st November 1845 he used it to describe the state induced by ether. The introduction of anaesthesia resulted in effective pain relief for surgical procedures for the first time.

Chloroform was first used as an anaesthetic in the United Kingdom by John Snow (1813-58), in St Georges Hospital London in 1846. It is interesting to note that the medical staff of the Belfast General Hospital were quick to embrace the new advance. The first mention of the use of chloroform in the Belfast General Hospital was in the Surgical report for the years 1848-49 which was given by Doctor Stewart. It is recorded "42 surgical operations have been performed, several of them under the influence of chloroform. The facts in relation to this agent are not yet sufficiently numerous to enable us to recommend or condone its general use. It is perhaps, however, only right that we take this opportunity of stating that it requires great caution and considerable experience to render its administration safe".

Three years later when the report for the years 1851-52 was being delivered by Dr James Moore, he said that chloroform was being used "in about every case of surgical operation".

Not long after this in 1866, ether came into use but it was not until 1900 that the Royal Victoria Hospital appointed its first two anaesthetists, Victor GL Fielden and RJ Johnstone.

As well as the advent of anaesthesia the 19th century saw another important advance, namely the use of antiseptics as introduced by Joseph Lister in Glasgow.

From 1861-65 between 45-50% of Lister's amputations for trauma died from sepsis. In 1865 Louis Pasteur suggested that sepsis was due to living organisms in the air which entered wounds and caused infection. Lister was quick to recognise the importance of this and he began to use carbolic acid to clean and dress wounds. The first use of carbolic acid in the Belfast General Hospital was also in 1865. Two years later at the annual BMA meeting, Lister was able to make the remarkable statement that no wound infections had occurred in his wards for 9 months, since he had started to use carbolic acid. Later as the nature of bacteria and infection became more fully understood, antiseptic surgery evolved into aseptic surgery.

Returning to developments in Belfast, shortly after the opening of the new hospital in Frederick Street in 1817, the staff proposed that medical teaching should commence and in 1820 the management committee of the hospital accepted this proposal. The following year formal teaching commenced, the first registered pupil being a Mr W Bingham, who after qualifying, practiced in Downpatrick until his death in 1848. Although teaching began in 1820, it wasn't until 1830 that the Royal College of Surgeons of Edinburgh and the University of Glasgow recognised teaching in the hospital as equivalent of any other hospital in the UK.

During those early years of the hospital the students had to obtain their degrees in medicine in some of the universities with medical faculties, eg Edinburgh, Dublin. It was therefore a logical step to set up a Medical School in Belfast and this was eventually established at Inst in 1835, before moving in 1849 to the newly established Queens College, Belfast.

There were a number of important figures involved in the setting up of our medical school, but I want to single out a father and son whose lives spanned the whole of the 19th century. They are Henry MacCormac born in 1800 and his son William who died in 1901, the former a physician, the latter a surgeon. I am indebted to the late Sir Ian Fraser for much of the material on these two interesting men. Sir Ian gave his Presidential address to the Ulster Medical Society in October 1967 on the MacCormacs. Later in October 1982 he delivered the Thomas Vicary Lecture at the College of Surgeons

of England on William. I feel that it is time to look at the lives of these two Ulstermen, and to acknowledge their roles in the development of medicine in Ulster, and the United Kingdom as a whole.

Henry was born in Carnan, Co Armagh. His father was a linen merchant who died when Henry was very young leaving his mother with 6 boys and two girls to bring up on a very small income. After an education at the Royal School Armagh he embarked upon medical study in Dublin, Paris and Edinburgh. He obtained his MD from the University of Edinburgh in 1824. He was appointed physician to the General Hospital at age 28, in 1828. On the establishment of the Medical School in 1835 he became the first Professor of the Theory and Practice of Medicine, a position he held until the establishment of Queen's College, Belfast.

On 17th January 1836 Henry's wife Mary gave birth to her first son (Illustration 4) William in their then residence at 17 Wellington Place. It is probable that he went to school at the nearby "Inst", although there are no records of this. He did attend Queens College



William MacCormac (1836 - 1901)

Belfast, graduating BA in 1855, and MD two years later. He then travelled on the Continent, establishing important and lifelong friendships with surgeons such as Bilroth, Von Esmarch and Lagenbeck. In 1859 he was appointed resident Medical Officer to the Belfast General Hospital at a salary of £100 per annum. In 1864 he obtained the Fellowship of the RCS Ireland, and in the same year was appointed attending surgeon to the Belfast General Hospital.

He was a tall handsome man and not surprisingly was a very eligible bachelor. He eloped with Katherine the daughter of one of the major linen merchants, John Charters. The marriage was a very happy one even though, initially, both families disapproved. The Charters thought their daughter was marrying a penniless surgeon and the McCormacs that their son was marrying into "trade", and not a profession. These views were soon put aside as Williams father in law made a major bequest to the hospital – enabling the Charters Wing to be added to the hospital.

In 1870 William took the very unusual step of resigning from his post in Belfast and going to Paris with Katherine, his aim being to partake in the Franco-Prussian War on the French side.

His first major exposure to war surgery came at Sedan where 12,000 casualties had to be treated. William kept meticulous diaries and among his many observations is one which is of current interest. "Surgeons if constantly overworked, fail to give of their best. It is sound judgement and clear intelligence that begins to fail before actual physical fatigue!"

MacCormac's diary recalled that almost all operations were performed under chloroform anaesthesia, and the wounds were dressed with carbolic acid. This was the first extensive use of these dressings in a war situation.

On many occasions MacCormac repeated what could be a motto for vascular surgeons even today. "A living man with three limbs is better than a dead man with four".

The Franco-Prussian war ended with the siege of Paris, the city capitulating on 28th January 1871.

Just prior to this William MacCormac returned to London. Early in 1871 a vacancy occurred at St Thomas' Hospital, and MacCormac was appointed an Honorary Assistant Surgeon to the hospital at the age of 35 years. Two years later he was appointed to the full surgical staff.

Over the succeeding 20 years MacCormac became a popular figure known to the students as Billy Mac or "The Irish Giant". He frequently attended the wards with his large Newfoundlander dog Baron Bruno, to whom he was devoted. The dog otherwise stayed in his consulting rooms in Harley Street, and was said to be able to tell the difference between old and new patients. When MacCormac went off to his third war, the Boer War, the Turko-Serbian war of 1876 being his second, the dog moped. Although it continued to go for the paper daily, he did so with his tail down. He was delighted to get into the carriage to collect his master on his return. The dog died on 22nd September 1901 at the fair old age of 14 years and it is nice to see that his collar takes pride of place among the large collection of medals and decorations that Sir William accrued during his life time.

Among the many honours bestowed on him was an honorary MCh in 1879 and three years later in 1882 an honorary DSc both bestowed by Queen's University Belfast. In 1881 he was knighted by Queen Victoria. In 1883 he was elected to the council of the RCS England, becoming president in 1896. He had his period of office extended from the then normal 3 years to 4 years, so that he could oversee the centenary celebrations of the college. As far as I am aware he is the only Belfast surgeon to have been president of the English College of Surgeons. In 1897 Queen Victoria made him a Baronet to mark her Golden Jubilee.

After a full and active life he died following a short illness on 4th December 1901 only a few months after his much loved dog Baron Bruno. At the time of his death he was described as the most important Ulsterman since Hans Sloane.

It is impossible to mention all of our predecessors who have made important contributions to the advancement of vascular surgery, but one person deserves a special mention not just for his contributions to vascular surgery, but also his pioneering work in transplantation. That man is Alexis Carrel who was born in the village of Sainte-Foy-des-Lyon a suburb of Lyon on the 28th June 1873. He was baptised Marie Joseph Auguste Balliard but after his father died from pneumonia when Alexis was 4 years old he became known as Alexis Carrel.

Carrel was small in stature, short sighted, with one blue and one brown eye. He commenced his medical education in 1890, and while still a student in 1894 was profoundly affected by an incident when the

then French president, who was visiting Lyon, was stabbed in the abdomen and subsequently died. The cause of death was a laceration of the portal vein which the surgeons were unable to repair. Carrel felt that there was no reason why blood vessels couldn't be sewn, and he decided that he wanted to be able to do this.

At the turn of the century he started experimental work on joining blood vessels, and published his successful early results of anastomosing a dogs femoral artery and vein in 1902.

Because of various disagreements with the medical establishment and his failure to obtain a permanent post in Lyon he left France on 6th May 1904 initially travelling to Montreal. After a short stay he went on to Chicago and obtained a position in the Hull Laboratory of Physiology. Here he encountered Charles Guthrie with whom he would do much experimental surgery.

The techniques which they developed in this period are too many to mention but they included arterial to venous anastomosis, vein interposition grafts, patch grafts on to vessels (still known today as the Carrel patch), and perfection of transplantation anastomotic techniques. If I could single just one important piece of work out, it was the fact that Carrel predicted that the way to repair popliteal aneurysms would not be either that of Hunter or Matas, but would involve the insertion of a vein bypass. This, like much of Carrel's other work, wasn't introduced into clinical practice until after the Second World War.

Guthrie and Carrel carried out work on amputation and re-implantation of dogs legs. It wasn't until 1962 that a successful limb re-implantation was carried out at the Mass General on a 12 year old boy whose arm had been traumatically amputated by a train.

Work on kidney removal followed by re-implantation was performed also in dogs. The first successful kidney transplant in humans was to wait until 1954 when Merrill and Murray in Boston, carried out a transplant between identical twins.

In 1906 Carrel moved to the recently established Rockefeller Institute for medical research where his early work was on the preservation of vein and arterial grafts. In 1909 he began a series of experiments in the field of cardiothoracic surgery: this became possible with the use of endotracheal intubation taught to him by Meltzer. Much work was done on resection and repair of the descending thoracic aorta, and he was the first person to note the occurrence of paraplegia

as a consequence of thoracic aortic occlusion. He developed shunts to avoid this complication, several decades before the same techniques were introduced to clinical practice.

In 1912 he received the Nobel Prize for Physiology and Medicine and was the youngest recipient of the prize at 39 years of age.

As well as writing extensively on experimental surgery and physiology, Carrel shared his thoughts about man in the wider scheme of things, and I feel that one quotation is still apposite today. "A great artist, a great scientist, a great philosopher is rarely a great man. He is generally a man of common type, with one side overdeveloped.

Genius can be compared to a tumour growing upon a normal organism. These ill balanced beings are often unhappy, but they give the entire community the benefit of their mighty impulses. Their disharmony results in the progress of civilisation. Humanity has never gained anything from the efforts of the crowd. It is driven onwards by the passion of a few individuals, by the flame of their intelligence, by their ideal of science, of charity and of beauty".

Carrel died in Paris a year before the end of the Second World War, on the 5th November 1944.

One of those individuals whose passion and intelligence has driven forward the development of solid organ transplantation with whom I have had the privilege of working for two very formative years in my career, is Thomas Starzl.

He was born in the small town of Le Mars, Iowa on 11th March 1926. His father owned the local newspaper. Starzl attended Northwestern Medical School in Chicago and went on to Johns Hopkins Hospital Baltimore to do his surgical internship, commencing on July 1st 1952.

The final two years of his residency were completed in Jackson Memorial Hospital Florida.

He then returned to Northwestern to complete a fellowship in thoracic surgery. By then he had decided that he wanted to advance the concept of liver transplantation. Work on dogs started in 1958 and all of the early canine transplants ended in failure with the death of the dog, within, at most, a couple of days. With the support of research grants techniques improved, as did a means of preservation of the donor liver, so that survival for about 1 week became the norm. At this stage rejection occurred.

One of Starzl's major contributions to transplantation was the introduction to clinical practice of the combination of steroids plus azathioprine to control the rejection process. This remained the means of controlling rejection in solid organ transplants until 1979 when Cyclosporin A was developed.

In 1962 Starzl moved from Chicago to Denver Colorado, and on 27th March 1962 he carried out the first kidney transplant in Denver – the patient survived for more than 30 years. On 1st March 1963 he performed the first human liver transplant. Unfortunately this proved unsuccessful due to uncontrollable bleeding. The second liver transplant patient survived for 22 days but the following three all died shortly after operation. Therefore in October 1963, having performed 5 transplants, the programme was halted.

In 1967 the scene was set for a further attempt at clinical liver transplantation this time with more, albeit limited, success. Seven children were transplanted, four died after 2, 3½, 4½ and 6 weeks. Two died with recurrent liver tumours, one aged 19 months at the time of transplant, survived 400 days. The other aged 16 lived for 14 months. The 7th in the series lived for 2½ years. In late 1967 a further child had a transplant for biliary atresia, and she was alive, when last heard of, some 23 years post transplant.

I wonder where liver transplantation would be today if Starzl's previous work had been conducted today rather than in the 1960's - 70's. Even for a surgeon with Starzl's amazing determination and drive, I think that it would be difficult to introduce a technique today where all of the first five patients died within a matter of days, what would happen? This was the result of the 1963 initial transplant series. In 1967 when 7 liver transplants were performed 4 died within weeks of operation. I suggest that in the over regulated climate in which we practice today, the PSNI would be asking questions on behalf of HM Coroner. The climate in which we practice today is very different to then. Indeed it is very different to that of only 10 -15 years ago. I do not feel that this altered climate is necessarily in the best interests of the patients.

In my opinion the media must bear a large responsibility for this changed climate. Rather than protecting the public they are more interested in sensationalism. How often do we watch or listen to the news when they report "doctors botch another operation" or some similar headline. Doctor bashing

has become more and more commonplace. Having said this, the profession itself is not blameless, and no one would try to justify the appalling exploits of Harold Shipman. This one case has been responsible for major changes as to how the coroner operates, so that now when an unexpected death occurs, the assumption is that a mishap has occurred until proven otherwise. The PSNI now collect statements directly, and even question doctors under caution, whereas formerly a senior medical person would gather such statements before forwarding them to the coroner. The atmosphere is increasingly that of distrust rather than trust which formally existed.

Not all of the blame for these changes can be placed at the door of the media, and the politicians should also accept responsibility. John Major's Patients Charter, whilst having a laudable ethos, gave rise to patients having expectations beyond those which were deliverable with the resources available. The current Labour Government has followed on by setting more and more draconian performance targets in the drive to simply reduce waiting lists, regardless of clinical need. Once more we fail to learn from the past. In 1776 Adam Smith, the Scottish political economist and philosopher published an important book "The Wealth of Nations". In this he wrote "Governments govern best which govern least". I suggest that our government today would do well to relearn this lesson.

Alongside complaints go league tables. Again no reasonable doctor can object to having his/her results monitored and compared to their peers. The problem is that it is very difficult to derive meaningful comparative data, for example, from mortality statistics. Returning to vascular surgery, no two aneurysm patients have the same risk factors and hence comparison of mortality rates at this crude level is of no value. It is only when one develops a complex score for risk factors eg PPOSUM, that a more meaningful comparison can be made.

Despite this, commercial organisations eg CHKS prosper on making crude comparisons between Trusts. On the basis of these errors league tables are compiled and published. It is little wonder that many people cast scorn on the results.

Before concluding, no discussion on the history of vascular surgery would be complete without my paying tribute to the role which three of my retired colleagues have played in the establishment and development of the vascular surgical service in this hospital. The unit was initiated through the

vision and foresight of the late Mr JWS Irwin and the late Mr RH Livingston. Throughout the early years of the troubles they dealt with the vascular injuries. Later in 1978 my now retired colleague, Professor AAB Barros D'Sa took up the challenge where Mr Irwin and Mr Livingston left off. I had the privilege of joining him in December 1980 following Mr Livingston's untimely death. In the early 1980s the unit became one of the first pure vascular surgical units in the United Kingdom. 1995 saw the establishment of the third Consultant post with the appointment of Mr PHB Blair. Mr AG McKinley was appointed upon the retirement of Professor AAB Barros D'Sa in the year 2000. Staffing of the unit has been further strengthened this year with the appointment of Mr DW Harkin as Senior Lecturer, and most recently the creation of a joint post with the Belfast City Hospital to which Mr L Lau was appointed last month.

Finally, having metaphorically stood on the shoulders of many giants of the past, I would like to conclude with an extract from the writings of Felix Wurtz of Basle.

“Skill in surgery is obtained with great painfulness, for it is not gotten with sitting on a cushion at home or by reading and writing. It is not enough to be full of talk and to say such and such and write so and so – a patient is little the better for it if the surgeon hath no skill”.

Wurtz was born not in the 20th century but in 1514 and died 60 years later.