

The emerging office of the Surgeon General

Lieutenant Colonel Robert L Pearce, AM, RFD, MB BS, BA, FRCS, FRACS, FRSA, FRSH, FRGS, FLS, FACTM, FAIM, MAIBiol, RAAMC

THE OFFICE OF SURGEON GENERAL, representing as it does the senior medical staff appointment to an army or to the Commander in Chief, dates from the late Middle Ages, when the value and practicality of going to war with dedicated medical support were becoming recognised. The Greek and Roman legions of earlier centuries had their followers who were capable of rendering first aid and minor treatments for battle casualties, generally with limited success. But until the beginning of the 16th century, when the French barber-surgeon Ambroise Paré started his illustrious career as a military surgeon, the surgical profession was generally held in low esteem.



Ambroise Paré, 1510–1590, leading surgeon of his time.

While it was not the custom in the 16th century to have doctors or surgeons attached to armies in the field, personal appointments did exist. In about 1537, Paré entered his first campaign as surgeon to the Mareschal de Montejan, colonel-general of the French infantry.¹ Ambroise Paré (1510–1590) rose from being apprentice to a barber-surgeon to the foremost surgeon of his time. He introduced anatomical discipline into surgery at a time when Vesalius and other anatomists were promoting the association between structure and function. Paré devoted many years to military surgery during religious campaigns in which he served four French monarchs as surgeon-in-chief. His advocacy of simple ligation of vessels instead of cautery after amputation, and of soothing applications instead of boiling oil for gunshot wounds, clearly demonstrated Paré's deep concern for his patients. Although outspoken against dangerous or obsolete practices, Paré delayed publication of his magnum opus *Apologie and Treatise* until 1585. He was then aged 75 and recognised as much for his judgement and technical skill as

Synopsis

- ◆ Throughout history the influence of warfare on medicine has been profound. Many of the greatest medical and technical advances have been achieved during wartime and war has proved a potent stimulus to the progress of surgical practice. Military medicine and military surgery have become recognised areas of specialisation. Since the latter part of the 19th century, medical officers in the defence forces have received their own rank structure comparable to that of other corps.
- ◆ The Surgeon General is now considered the most senior medical officer in the armed forces. No longer a surgical position, the Surgeon General's prime responsibilities continue to be those addressed by early leaders of military medicine.

ADF Health 2002; 3: 36-39

for his integrity and moral courage. The first English edition of Paré's *Method of curing wounds made by gun-shot* was published in London in 1617.²

In 1645, Oliver Cromwell was responsible for the creation of the New Model Army which, for the first time, allowed for dedicated regimental medical establishments consisting of a regimental chirurgeon assisted by one barber-chirurgeon with each company. Cromwell's own chirurgeon general, James Winter, was paid at the lowly rate of four shillings a day, compared with ten shillings for a physician of higher professional standing. External medicines, such as materials for fomentations, liniments, dressings and ointments, were at that time provided by the surgeon, but the costs of such items were passed on to the soldiers themselves by means of a compulsory levy of 2d a month.³

The appointments of Physician General, Surgeon General and Apothecary General first appeared during the English Civil War.

In Britain the Standing Army had its own medical officers from its inception in 1660.⁴ In addition to the Regimental Medical Officers the need arose for the appointment of medical officers of higher rank to direct army medical affairs. Thus a Medical Staff developed, comprising the Surgeon General, a Physician General and an Apothecary General. Although James Fontaine (or des Fontaines) held the appointment of "Chirurgeon-General" in Ireland from 1661, the first appointment of "Surgeon-General of all the forces in England and Wales" occurred in 1664, when John Knight,

Lieutenant Colonel Robert L Pearce, AM, RFD, MB BS, BA, FRCS, FRACS, FRSA, FRSH, FRGS, FLS, FACTM, FAIM, MAIBiol, RAAMC, Plastic and Reconstructive Surgeon.
Correspondence: Dr Robert L Pearce, C/- Director of Health Resources, Defence Health Service Branch, CP2-7-93, Campbell Park Offices, Canberra, ACT 2600.

who had been Sergeant-Surgeon to Charles II, was promoted to direct the medical affairs of the King's army. The first Surgeon-General to serve two British monarchs was James Pearce, who held the appointment during the reign of Charles II and at the time of the succession of James II in 1685.⁴

The Physician General, Surgeon General and Apothecary General were not officially part of the Headquarters Staff until William III's campaign in Flanders in 1691.

Among the first doctors to be appointed Physician-General to the Land Forces in England (1722) was Sir Hans Sloane (1660-1753), who became President of the Royal Society and, in 1727, First Physician to George II. After his death the famous Sloane collection provided the nucleus for the establishment of the British Museum.⁵

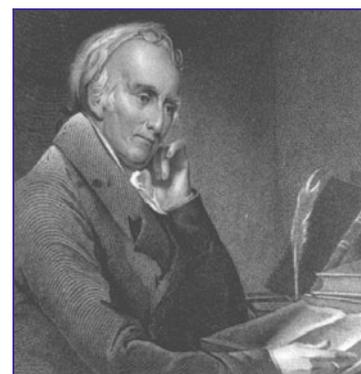
The title of Surgeon-General was also applied in the 17th century to the senior Medical Officer of the British East India Company. The first Surgeon-General appointed was John Woodall, who, in 1617, published *The surgeon's mate*. In this small book Woodall gave instructions on the use of oranges, lemons and limes for preventing and treating scurvy.⁶ While others advocated hot irons and boiling oil to control haemorrhage, Woodall followed the example of his contemporary Paré in ligating the vessels after amputation. Through his experience of the plague in the epidemics of 1625 and 1636, Woodall also published a treatise on the *Plague and pestilential fever*.

When John Hunter (1728–1793) became Surgeon-General of the English Army in 1790 he was also Inspector of Regimental Hospitals. His colleague, Sir Clifton Winthringham, the Physician-General, was a very old man and an invalid, so that, until Hunter's death in 1793, practically all the medical affairs of the army devolved on him. War broke out between England and France during Hunter's appointment and he managed the medical support for 10 overseas expeditions. Hunter himself served at the siege of Belle Isle in France and also in Portugal. A result of this active involvement with the army was his last publication — *Treatise on blood, inflammation and gunshot wounds* (1794). In it he wrote: "It is against all the rules of surgery and against what we know of animal economy to make a wound larger, unless one needs to prepare it to do something more . . . This is ordinary surgery and it should also be war surgery in regard to shot injuries."⁷

John Hunter was elected a Fellow of the Royal Society and was a contemporary of James Cook, Joshua Reynolds, Samuel Johnson, Joseph Banks, and Percival Pott. From his extensive personal experience in comparative anatomy he advised his students, including Edward Jenner, to experiment, and for his own contributions to medicine he is venerated as the founder of scientific surgery.⁸

The revolution in the sciences during the latter part of the 18th century was concurrent with enormous social and political upheavals in America and France. America's struggle for independence from British colonialism reached its climax with a bitter war and resulted in the Declaration of

Independence in 1776. Among the signatories to the Declaration was Dr Benjamin Rush, who subsequently held the appointment, albeit briefly, of Surgeon General and Physician General of the Middle Department of the Continental Army.⁹ He resigned this post in 1778, as he considered the military hospitals mismanaged by his superior, Dr William Shippen, the Director General of the Medical Department, who was supported by General Washington. Rush went on to question Washington's military judgment. Rush was a dogmatic and, from our perspective today, somewhat contradictory theorist. Although he encouraged clinical research and was a graduate of Edinburgh University, he was also a student of Boerhaave and insisted on bloodletting, purging and other debilitating therapeutic measures. The worse the fever, he believed, the more heroic the treatment. Early in his career he campaigned against slavery, tobacco, alcohol, capital punishment and even war. Later, despite his own contributions and the mood of the times, he lost faith in political and social reforms, but his early pamphlet, *Directions for preserving the health of soldiers*, proved his ability as a military doctor, and his theories and teachings influenced succeeding generations of practitioners.



Benjamin Rush (1746-1813),
physician, teacher and man of
affairs.

Meanwhile, across the Atlantic, France faced its own political and social turmoil during the citizens' revolution which began in 1789 with the storming of the Bastille. Dominique-Jean Larrey (1766–1842) commenced his military and medical careers as a young military surgeon in Napoleon's army. His experience in an early campaign on the Rhine in 1792 convinced Larrey of the shortcomings of military surgery and of the organisation provided to care for the injured. Exhibiting an unusual blend of initiative and courage he entered the field of battle, often amputating and dressing wounds under enemy fire.¹⁰ He then evolved a system of flying ambulances to evacuate casualties from the battlefield during Napoleon's campaigns, thus saving many lives. It is said that he ignored rank, insisting on treating the severely wounded first.

Larrey also took an interest in field hygiene and preventive medicine, and his observations on typhus, bubonic plague, leprosy and trachoma were recorded from battle situations. He developed extensive practical experience and ability in military surgery through his involvement in every Napoleonic campaign, including the battles of Moscow, Austerlitz and Waterloo. Not only was Larrey appointed Surgeon-in-Chief to the Grande Armée, but he was also Surgeon to the Imperial

Guard and to Napoleon himself. Napoleon created him Baron Larrey and stipulated in his will: "To the French Army's Surgeon General, Baron Larrey, I leave a sum of one hundred thousand francs. He is the worthiest man I ever met."¹¹

At the Battle of Waterloo, Napoleon Bonaparte's eventual field of defeat, Wellington had, as Chief of the Medical Department of the Army, Sir James McGrigor, who "... was indeed an able man in his profession, a thorough soldier and an excellent public servant. He was prompt in disencumbering the army of really disabled patients, and equally prompt in restoring the slightly ill or wounded to the ranks."¹² But Wellington had no surgeon with the fearless courage or determination of Larrey, whose devotion to duty under fire was applauded on both sides.

In 1788 Surgeon John White arrived at Sydney Cove as Surgeon-General to the First Fleet and to the settlement at Port Jackson.¹³ He was to remain in New South Wales as Principal Surgeon for seven years, surviving the most difficult period in the early establishment of the colony, when food shortages and disease were exacerbated by the arrival of more convicts in the Second and Third fleets. White was a competent doctor and able administrator under the most trying circumstances, but he is best remembered now for his *Journal of a voyage to New South Wales*, in 1790 only the second publication from the new settlement. This journal has become a valuable record of the early settlement at Port Jackson, with descriptions of local exploration, of the Aborigines and of the flora and fauna and other specimens he sent back to England. Some of these were described by John Hunter and may have been displayed in his museum.

White was initially critical of the administration and had a poor impression of the colony, though he later modified his remarks and even prophesied that "... measures will be pursued that will very soon make it in a great degree independent of the mother country."¹⁴ After leaving New South Wales, White served on various ships and naval bases as a surgeon until he retired in 1820. His Australian-born son, Andrew, joined the Royal Engineers and fought at the Battle of Waterloo.

The war in the Crimea is usually remembered as a series of administrative blunders, the disasters punctuated by episodes of great but often pointless heroism on both sides. The first awards of the Victoria Cross were made for conspicuous gallantry during this conflict and the medal is traditionally struck in bronze from a Russian cannon captured at the Crimea. One of the earliest VCs was won by Surgeon James Mouat in the famous Charge of the Light Brigade on 25 October 1854. Mouat was also awarded the French Legion d'Honneur and he was later knighted by Queen Victoria. Mouat was appointed Surgeon General in 1864 and served in that role until 1868.⁴

In 1848, a young German doctor, Friedrich von Esmarch, was called up as an army surgeon in the war with Denmark, during which he was taken prisoner. After the war he returned to Kiel, where he was appointed Professor of Surgery in 1857.

Esmarch saw further military service, however, and his contribution to this branch of surgery was significant. He is remembered for introducing a system of triage which gave priority to casualties who were most at risk though salvageable by emergency care and resuscitation. Esmarch was also responsible for introducing first aid measures, including the triangular bandage, which he insisted must be carried by every soldier in battle, and he instituted training in first aid for civilian and military personnel. His handbook of military surgery technique and his manuals on first aid were to become standard texts. In the Franco-Prussian war of 1870 Esmarch was appointed Surgeon General.



Friedrich von Esmarch (1823-1908).

Throughout the 19th century there were few changes in the administration or structure of the medical department of the British Army until the definitive establishment of a Medical Corps in 1898. By the

time Australia entered the South African War in 1899 it had its own Australian Army Medical Corps, with Colonel W D C Williams, Principal Medical Officer of the New South Wales Military Forces, as Surgeon-General.¹⁵ Williams had prepared a departmental corps containing experienced surgeons, as well as trained hospital orderlies, stretcher bearers and dedicated transport. For the first time Australian troops were cared for by their own doctors. There was also a small contingent of Australian nurses who volunteered for service in South Africa.

On 24 July 1901 Lieutenant Neville Howse of the Australian Army Medical Corps risked his own life to rescue a wounded Australian trooper and for this act of bravery was awarded the Victoria Cross — the first Australian and the only Australian doctor to receive the award.^{15,16}

Howse returned to civilian life to practise medicine in Orange, New South Wales, where he was elected mayor. In World War I he saw further military service. He was Principal Medical Officer, with the rank of Lieutenant Colonel, of the Australian Naval and Military Expeditionary Force which seized German New Guinea in 1914. The following year, under the command of Surgeon-General Williams, Howse arrived in Egypt with the First AIF to prepare for the landing at Gallipoli. There he worked not only as the senior administrative medical officer of the Division, but as a surgeon at a casualty clearing station. After the evacuation Howse was appointed Director of Medical Services AIF, with the rank of Surgeon-General.¹⁷

Howse found the duties of Director of Medical Services more onerous in France, where five Australian Divisions in the field were eventually brought together in the Australian Corps under Lieutenant General Sir John Monash in 1918.

With unsurpassed diplomacy he developed working relationships with British Headquarters Staff and his counterparts in the RAMC, replaced British with Australian medical officers in Australian units and completely dominated the AIF Medical Service.¹⁸ His policy of positioning surgical teams as close as possible to the front line and his adherence to the principle of rapid evacuation of casualties were reminiscent of Larrey. To quote the official historian of the Australian Medical Services, A G Butler:¹⁸

It may be doubted whether, since Baron Larrey directed medical affairs for Napoleon and Sir James McGrigor for Wellington, any head of a medical service has gained so completely the confidence of the Military Command or exercised so great a personal influence on medical affairs as did Surgeon-General Howse.

Howse had a flair for discerning the essence of medical responsibility, but his talent for concentrating on what he deemed essential and practical did not extend to acceptance of an American scheme for training nurses to give anaesthetics.¹⁸

Military historians have rightly pointed out the futility of war as well as the apparent inability to learn from past experience. So often military commanders have placed more value on personal pride and reputation or on weapons and equipment than on human lives. Yet Ambroise Paré in the 16th century proved the value of dedicated military surgeons through the validity of humane and scientific practice. Morale among the troops was also obviously heightened by Larrey's management of casualties on the battlefield, their rapid evacuation and his policy of non-discrimination. Larrey is said to have awakened the conscience of mankind to the inhumanity of war.¹⁰ Others, such as leading French military surgeon M. Duval, carried the message into the 20th century. Speaking at the 1917 Interallied Congress of Surgeons held in Paris, Duval said, "*Il est impossible que le blessé aille chercher son chirurgien; il faut donc que le chirurgien se porte au devant du blessé.*" (It is impossible that the wounded man should go in search of a surgeon; it follows then that the surgeon must betake himself to the wounded man.)¹⁸

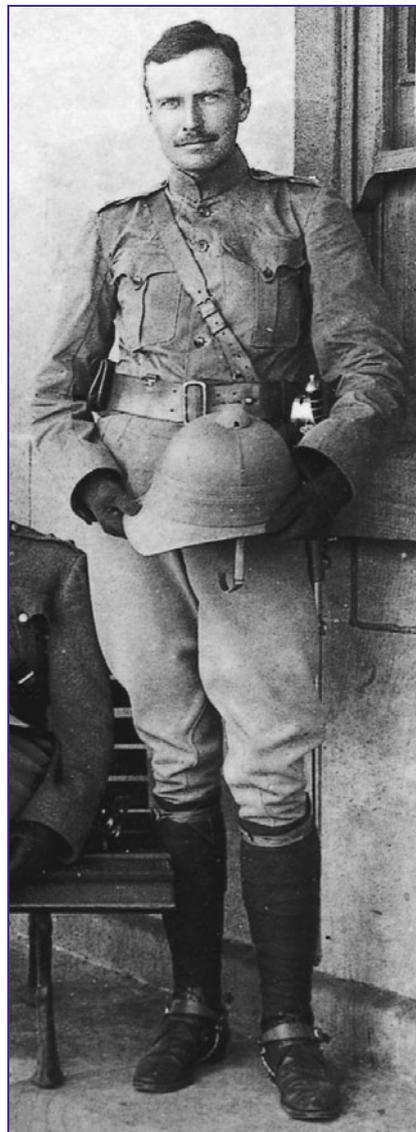
The office of Surgeon-General has evolved with scientific medicine itself, until the techniques and technology of modern warfare are guaranteed support in casualty care and evacuation of

comparable standard. Perhaps a legacy of past holders of the office of Surgeon-General is the value we now place on modern specialised training in military surgery and dedicated skills in the triage, treatment and transport of casualties. No longer is it necessary or even appropriate, however, for the senior medical advisor to the defence forces to be a surgeon, though perhaps one ought to possess the attributes required by Celsus of a surgeon — "a strong and firm hand, and never tremulous; a mind undaunted and merciless."¹⁹

References

1. Keynes G. The Apologie and Treatise of Ambroise Paré. New York: Dover, 1968.
2. Doe J. A bibliography of the works of Ambrose Paré. Chicago, 1937.
3. Cantlie N. A history of the Army Medical Department. Vol 1. Churchill Livingstone, 1974: 22.
4. Drew R. Medical Officers of the British Army, 1660–1960. London: The Wellcome Historical Medical Library. Vol. I. 1968.
5. Encyclopaedia Britannica 15th ed. Vol 10. 1985.
6. Patterson TJS. Medical officers of the British East India Company. *Trans Soc Social History Med* 1978; 23: 34.
7. Hunter J. Treatise on blood, inflammation and gun-shot wounds. 1794. Hunterian Literature Collection. Royal College of Surgeons, London. [Facsimile edition in the Classics of Medicine Library, Birmingham Alabama, 1981.]
8. Beasley AW. Fellowship of three. Sydney: Kangaroo Press, 1993.
9. Flexner JT. Doctors on horseback. *Heinemann*, 1938: 69.
10. Richardson RG. Larrey: surgeon to Napoleon's Imperial Guard. John Murray, 1974.
11. Haeger K. The illustrated history of surgery. London: Starke, 1989: 161.
12. Fortescue history of the British Army. Vol X. Quoted in: Butler AG. Official history of the Australian Army Medical Services, Vols. I–III. Melbourne: Australian War Memorial: 857.
13. White J. Journal of a voyage to New South Wales. Sydney: Angus and Robertson, 1962: 30.
14. Reinitz R, White, John (c. 1756–1832). In: Shaw AGC, Clark CMH. Australian dictionary of biography. Vol 2, 1788–1850. Melbourne: Melbourne University Press, 1983: 594–595.
15. Barton GB, et al. The story of South Africa. Vol II. Sydney: World Publishing Co.
16. Smithurst BA. Sir Neville Howse, Australia's only Medical VC. In: Pearn J, O'Carrigan C, editors. Australia's quest for colonial health. Brisbane: Amphion, 1983: 123.
17. Bean CEW. Two men I knew. Sydney: Angus and Robertson, 1957.
18. Butler AG. Official history of the Australian Army Medical Services, Vols. I–III. Melbourne: Australian War Memorial, 1938.
19. Carpue J. On restoring a lost nose. London, 1822. Hunterian Literature Collection. Royal College of Surgeons, London. [Facsimile edition in the Classics of Medicine Library, Birmingham Alabama, 1981.]

(Received 18 July, accepted 4 October 2001) □



Neville Howse en route to South Africa in 1900.