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# SURGICAL HISTORY

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## AUSTRALIAN SURGEONS AND SOCIETY<sup>1</sup>

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*Sydney*

A GOOD SURGEON has always been appreciated by his society.

In ancient Egypt Sinuhe was entrusted to trephine Pharaoh Amenhotep and let his spirit free. This was the duty of the skull surgeon. Homer writes in the *Iliad* that when Macaon, son of Asklepios, was wounded, a concerned General Agammemnon said of him that a surgeon who could cut an arrow out and heal a wound was worth a regiment. Sushruta, famed surgeon of ancient Aryan India, wrote that surgery was the first and highest division of healing, unsullied in itself, perpetual in its application, a worthy gift of heaven and a source of fame on earth.<sup>1</sup> Surgeons match their society — its humanity — its background — its challenges — its courage — its organization — its industrial strength — its scientific and technological achievements.

I will try to show how surgery and the philosophy of surgeons in Australia have grown from small beginnings by selectively adapting to a changing society, using the organization, scientific accomplishments and technologies available to them.

White Australia was born in an age of revolution. The English Revolution had recently changed society, and Parliament had swept away despotic rule. A new commercial class insisted on taking part in government. Britain's population had swelled in the wake of the Industrial Revolution, and masses of displaced and restless people had migrated to London where a rich commercial class wielded political power — and poverty and vice stalked the city. These were the great days of science — of the gentlemen of the Royal Society, experimental philosophers, and followers of W. J. Locke.

As a part of Australia's scientific heritage, I would like to match Joseph Banks, naturalist and scientist, who sailed with Cook on his voyage and who later became President of the Royal Society, with John Hunter, an active Fellow of the Society, anatomist, military surgeon, and founder of experimental surgery. I would match both Banks and Hunter with Captain Cook the explorer, another Fellow of the Society. Unfortunately, he was slain by the Hawaiian islanders, who thus deprived themselves of one who might have influenced the British Government and protected the peoples of the Pacific.

Ours was the heritage of war — the Napoleonic War. The surgeons of note were military surgeons. I would like to match Jean Dominique Larrey, Napoleon's surgeon, with George Guthrie, surgeon to the Duke of Wellington's army throughout the Peninsular War. Larrey introduced first aid to the wounded by his flying ambulances, and emergency surgery by excision of wounds, amputations and dressings, hard by the battlefield. He associated syphilis and trauma with aneurysm and demonstrated collateral circulation after arterial interruption. He employed Hunterian ligation for aneurysms.

Guthrie was a Briton of a similar kidney. Among many vivid descriptions in his famous *Commentaries*<sup>2</sup> he gave accounts of chest wounds including surgical emphysema, pneumothorax and empyema associated with retained missiles. He performed the first successful amputation of the hip after Waterloo, and he devised an operation for traumatic diaphragmatic hernia. He also wrote an excellent treatise on diseases of the eye.

Figure 1 depicts a patient who was hit in the sternum by a spent cannonball. He took the ball from the wound himself. His surgeon later found the lung collapsed and the aorta visible. The wound granulated and the patient made a good recovery.

1. Lecture delivered to a meeting of the John Loewenthal Surgical Society, Melbourne, September 1979.

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FIGURE 1: George Guthrie's patient who was hit in the sternum by a spent cannonball, illustrated in Guthrie, *Commentaries on the Surgery of War*, London: Renshaw, 1855.

Naval actions were bloody affairs. Figure 2 is a painting which shows Nelson at Trafalgar, wounded in the chest, paralysed, and bleeding. His surgeon Beattie is attending him.<sup>3</sup>

The first doctors in the colony of New South Wales were naval surgeons, not skilled in surgery, but matching the times. Besides their duties to the sick and in dealing with accidents, some were naturalists and collectors. They were never more useful.

Within a few days of the Fleet's arrival in Sydney, the tented wards were filled with patients suffering from scurvy and dysentery. As there were no fresh vegetables aboard and medicines were in short supply, John White and Dennis Consider, both of whom had a knowledge of botany and pharmacy, searched for substitutes among the natural plants. They found natural celery and parsley (Sydney's Parsley Bay) and sarsaparilla, all of which proved useful in scurvy, and Angophora, the red gum, and the yellow gum of the grass tree, both of which were powerful astringents and useful for dysentery. Consider later distilled eucalyptus oil.

I would match Captain Arthur Phillip with his surgeon, John White. The Governor was an experienced naval officer, well versed in survey work and in transportation, for he had escorted convicts to



FIGURE 2: *The Death of Nelson*, by A. W. Nevis. The dying admiral is attended by his surgeon, Beattie (by courtesy of the trustees of the National Maritime Museum).



Brazil for the Portuguese Navy. It was largely by reason of White's foresight and medical care and his insistence on clean clothing, hygiene, and fresh food, that the fleet transported 1,500 men across the world with thirty-four deaths. White published his journey *A Voyage to New South Wales*,<sup>4</sup> sent the first kangaroos to Britain, and fought the first duel with his truculent colleague, William Balmain.

We honour the early naval surgeons for the part they played — mainly advisory and humanitarian — but in other ways as well. Some were explorers. Surgeon George Bass came to Australia with Hunter and Flinders on H.M.S. *Reliance*. Within five weeks of their arrival and in a fever of discovery, Bass and Flinders set off to explore the southern coast of the continent. The Bass Strait, which commemorates Bass's discovery, shortened considerably the early sailing routes from London and China to Australia.

I would match William Redfern, the Governor's personal doctor, alongside Governor Macquarie. Redfern was an ex-naval surgeon whom Macquarie pardoned. He helped the convicts and shared the Governor's eclipse. Both men had a strong sense of duty and fair play, and both shared a great vision for New South Wales and Australia.

Sydney Hospital in Macquarie's time is shown in Figure 3. It was constructed by the Governor in exchange for his granting a duty — free monopoly of all liquor imported into the Colony — hence its traditional name of the "Rum Hospital".

William Bland (1789-1868) (Figure 4) was the first bright light in squalid times. With Redfern he bridged a gap between authoritarian military service in Sydney and private practice. He was a real surgeon.

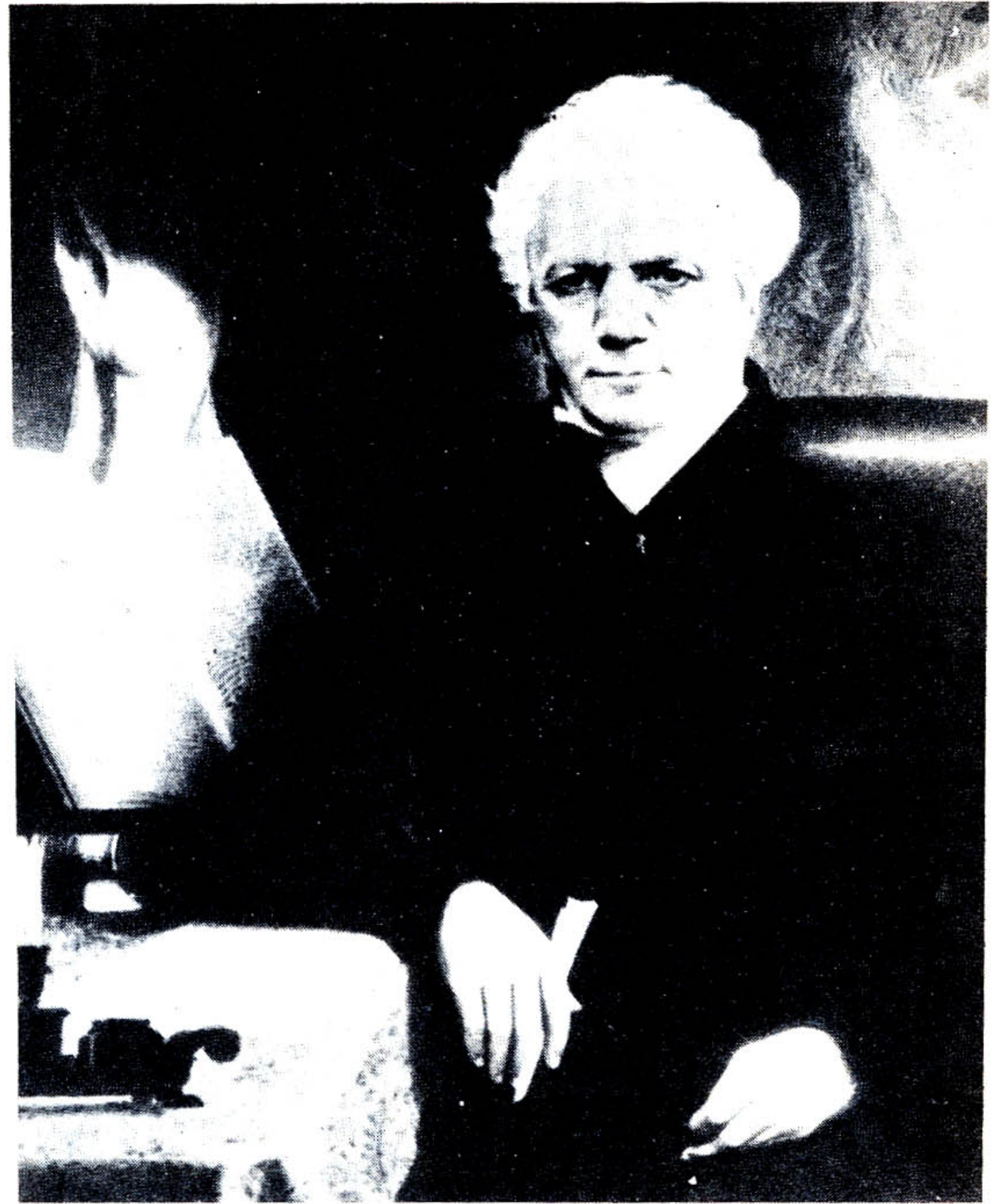


FIGURE 4: William Bland, first medical practitioner and surgeon of note in Australia.

He ligated an enlarging and painful innominate aneurysm (Figure 5) in a young man (Mullens) in 1832. One marvels at their courage — the one to operate and the other to submit to a dangerous operation lasting for five and a half hours without an anaesthetic. Mullens died a few weeks later from

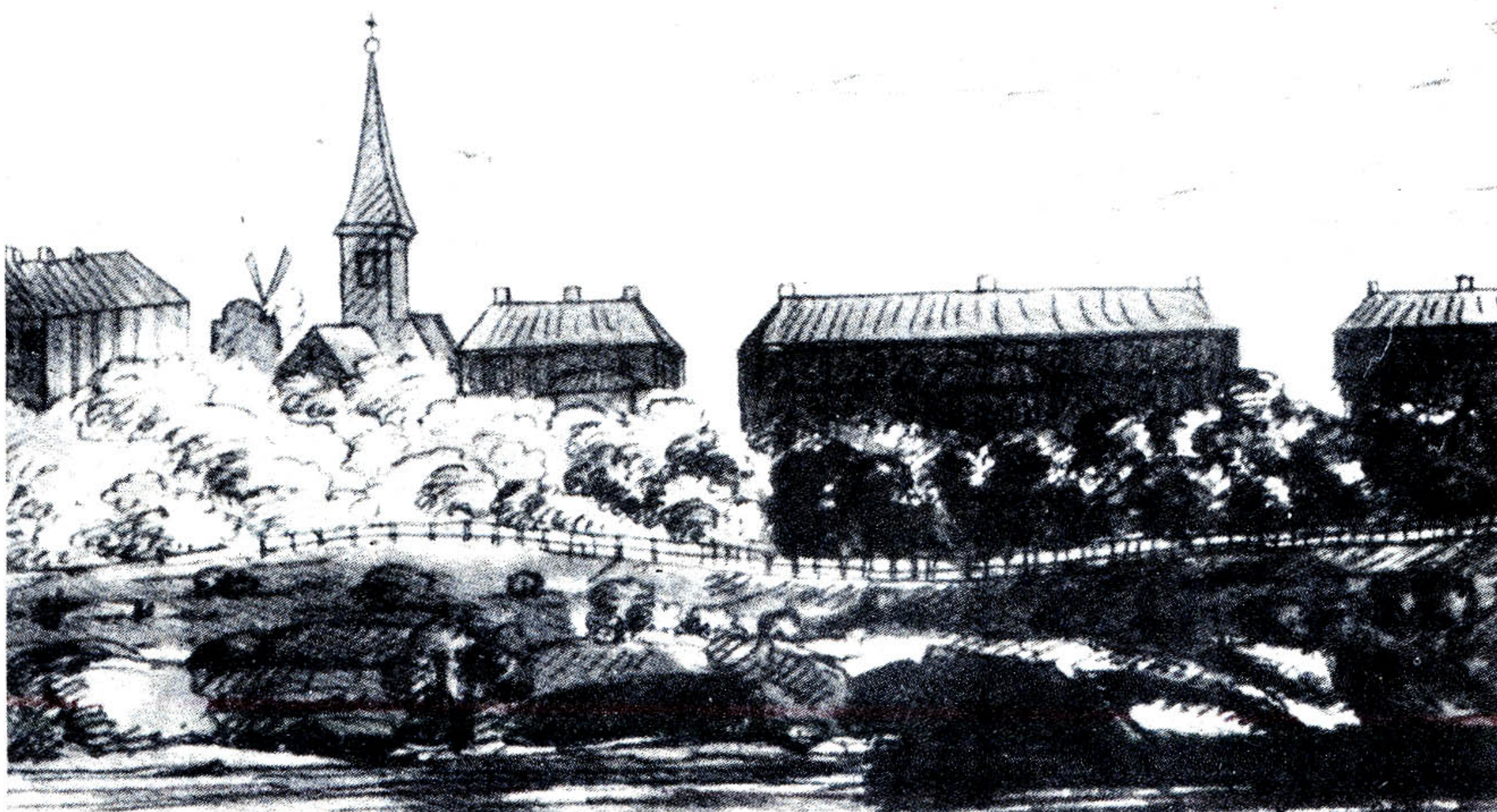


FIGURE 3: Sydney Hospital in Macquarie's time, sketched from the foreshore.



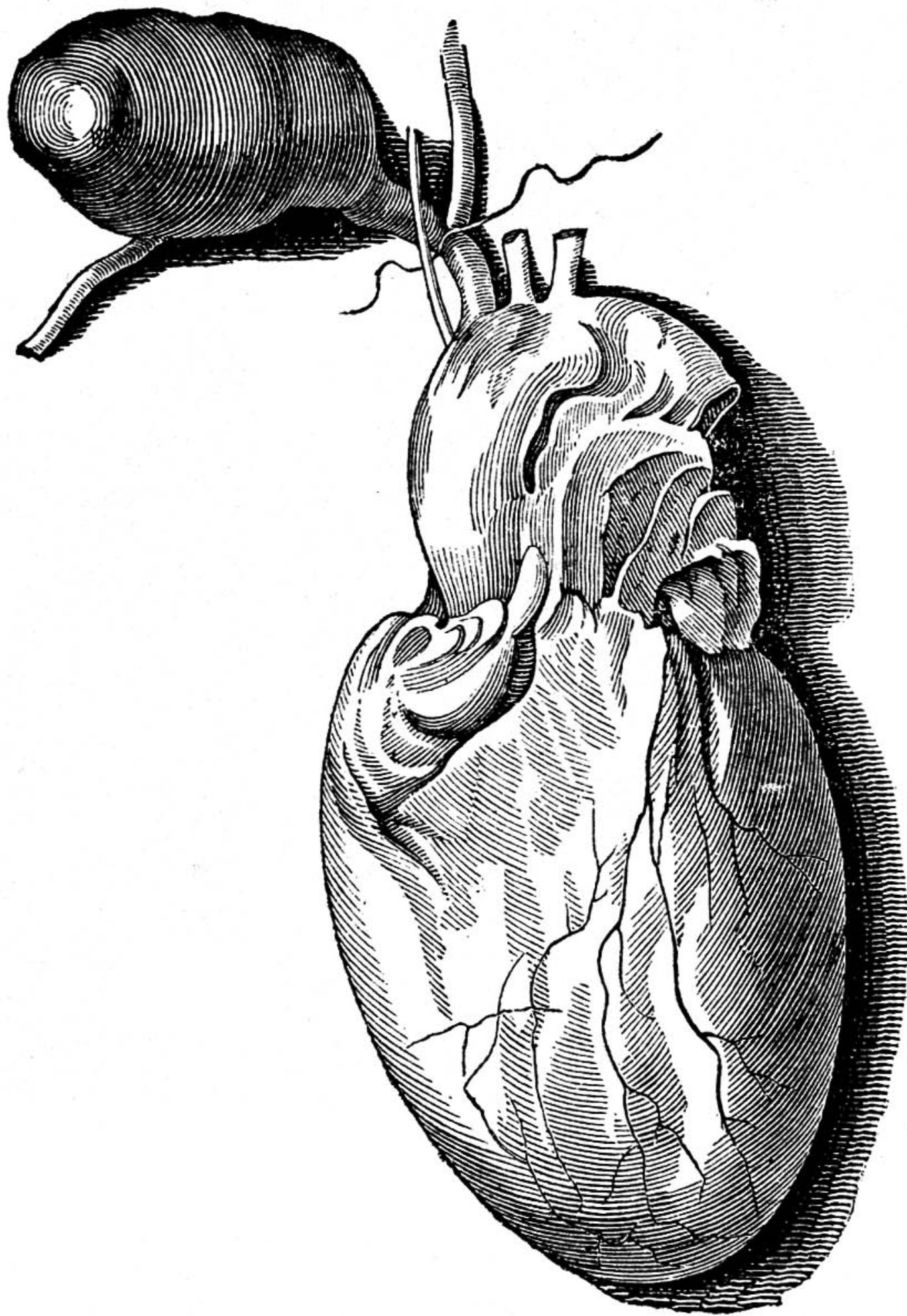


FIGURE 5: Bland's diagram depicting the aneurysm which he ligated — from the illustration in the *Lancet*, 1832.

rupture of the aneurysm which, though doubly ligated, was still in continuity with the artery.

Bland, an ex-naval surgeon of H.M.S. *Hester*, was convicted and transported from Bombay in 1813 for killing purser Robert Case in a duel. He was pardoned in 1815 and became Australia's first private practitioner. He was a founder of the Benevolent Society of New South Wales, which treated the poor; he was its first honorary surgeon. He was a lover of liberty and an ardent supporter of trial by jury. He was one of the founders of the University of Sydney and an inventor of note, the most widely appreciated of his inventions being a chemical method for extinguishing fires in woolships, and a powered airship, the prototype of the *Graf Zeppelin*.<sup>5</sup> He was a patriot.

The establishment of nursing and medical teaching in New South Wales was an event of great consequence. Before the antiseptic method was introduced, surgery was hazardous and concerned with preservation of life and limb. I would like to

associate Florence Nightingale, perhaps the greatest of women, with Henry Parkes, Premier of New South Wales, and with the fortuitous attempted assassination of Prince Alfred, Duke of Edinburgh, in 1868, a concurrence which launched nursing and medical reforms in Sydney and nursing services throughout Australia.

Parkes and the Government of New South Wales were only too aware of the maladministration and lack of hygiene and order in the hospital. He requested Miss Nightingale's help to establish a nursing service in the Colony, and she gave it. She sent Lucy Osburn to Sydney along with five nursing sisters. Their arrival, some days before the misfortune happened to the prince, was providential. They were assigned to nurse him in Government House. The bullet, which was superficially placed in the chest and had been deflected by a rib, was removed by naval surgeons, Watson and Young.

Public reaction to nursing skill, and revulsion to the crime and the medical conditions in Sydney at the time, combined to initiate the Royal Prince Alfred Hospital as a teaching hospital and nursing school. It was opened on the Sydney University campus in 1882. Similar sentiments led to the founding of the Alfred Hospital in Melbourne. The nursing services prepared the way for the new surgery and for hygienic hospital wards.

Melbourne, having never known authoritarian rule, inherited the liberal traditions of the London teaching hospitals from its early surgeons. I would like to mention three, all of whom led different lives, but who influenced Melbourne surgery.

Sir Frederick Palmer (1803-1871), one time Fellow of the Medical and Surgical Society of London and staff surgeon to St George's Hospital, London, and editor of Hunter's works in four volumes, migrated to Sydney in 1840. He abandoned the idea of surgery and established a successful wine and cordial business in Melbourne. Palmer was the man who moved at a public meeting that the Melbourne Hospital be established. Some years later, when Mayor, he predicted rightly that this institution would one day become a centre of education and research and be of service to rich and poor alike.

David Thomas (1813-1891), elected the first surgeon to the hospital, was obviously a thoughtful and cultivated man and one with a sense of humour. He performed the first surgical operations under ether anaesthesia in Victoria in 1847; was the first surgeon to ligate the radial, the carotid, the external iliac and the femoral arteries; and the first to take postgraduate leave in Europe.





FIGURE 6: James Beaney operating at the Melbourne Hospital.

The third surgeon is James Beaney (1826-1891). He is depicted in Figure 6 carrying out an amputation through the knee, dressed in a frock-coat, with his cuffs unrolled, and manipulating a saw with his bare hands.<sup>6</sup> "Diamond Jim", as he was known, was appointed to the Melbourne Hospital in 1860. He was elected to the Royal Society of Victoria and to the Legislative Assembly. Despite his blemishes, he was a remarkable and controversial figure with a lucrative private practice, and one who thrived on medical antagonisms. He was charged twice with manslaughter and acquitted on both occasions. He published the first Australian surgical works, contributed to the early teaching of medical students, and performed a successful distal ligation of an innominate aneurysm on two occasions.

Melbourne was the centre of a pastoral community, which mushroomed overnight when gold was discovered nearby in 1851. A surgeon's life was primitive and hard on the goldfields. One surgeon, when interviewed, admitted that he had joined in the gold rush for excitement. He had followed the digging from gully to gully, never without a pistol strapped to his side. He treated gunshot wounds, stabbings, fractures, dysentery, and ophthalmia, and he supplemented gold earned from digging with guineas from fees. Quacks abounded.

I quote this rhyme which satirizes the advantages they took of the credulous miners.

Some testimonial of my skill  
a marrow bone I sawed  
I called it a tibia by Jove  
people handled it with wonder  
and said I was a clever cove.<sup>7</sup>

Lister's antiseptic method ushering in the antiseptic era was introduced into Australia in 1868 by William Gilbee, surgeon to the Melbourne Hospital. The transition from the old to the new era took some time. Figure 7 shows an operation taking place in the operating theatre of the Melbourne Hospital. Side-whiskered, Thomas Fitzgerald, Irish teacher of a generation of surgeons, dressed in frock-coat, talks to onlookers, whilst Dr Embley is administering an open ether anaesthetic. The vested assistant, his hands encased in elbow-length gloves, waits, and the discreet sister is in the background.

I would like to match two dedicated and beloved Melbourne surgeons working at the turn of the century, namely Hamilton Russell and George Syme, with two dynamic Sydney surgeons, Anderson Stuart and Alexander MacCormick, to both of whom Sydney's rise as a medical centre was principally due.

Hamilton Russell (1860-1923), a sensitive musician as well as a beloved surgeon, was born and trained in England, and became Lister's disciple and Melbourne's first surgeon of world stature. He contributed to many fields — to hernia, to fractures, to hydatid disease and to empyema. He performed Australia's first planned thoracotomy for removal of a pin, and Figure 8 is an early chest skiagram showing the pin.

George Syme (1859-1929), Nottingham-born graduate of the University of Melbourne in 1881, became a Fellow (F.R.C.S. Ed.) in 1885. He was a puritan master-surgeon and a public-spirited citizen whose work in a wide field of surgery — hydatid disease, abdominal and vascular surgery — and whose work





FIGURE 9: Australian stretcher bearers bringing in the wounded, painted by Will Dyson and reproduced by courtesy of the Australian War Memorial.

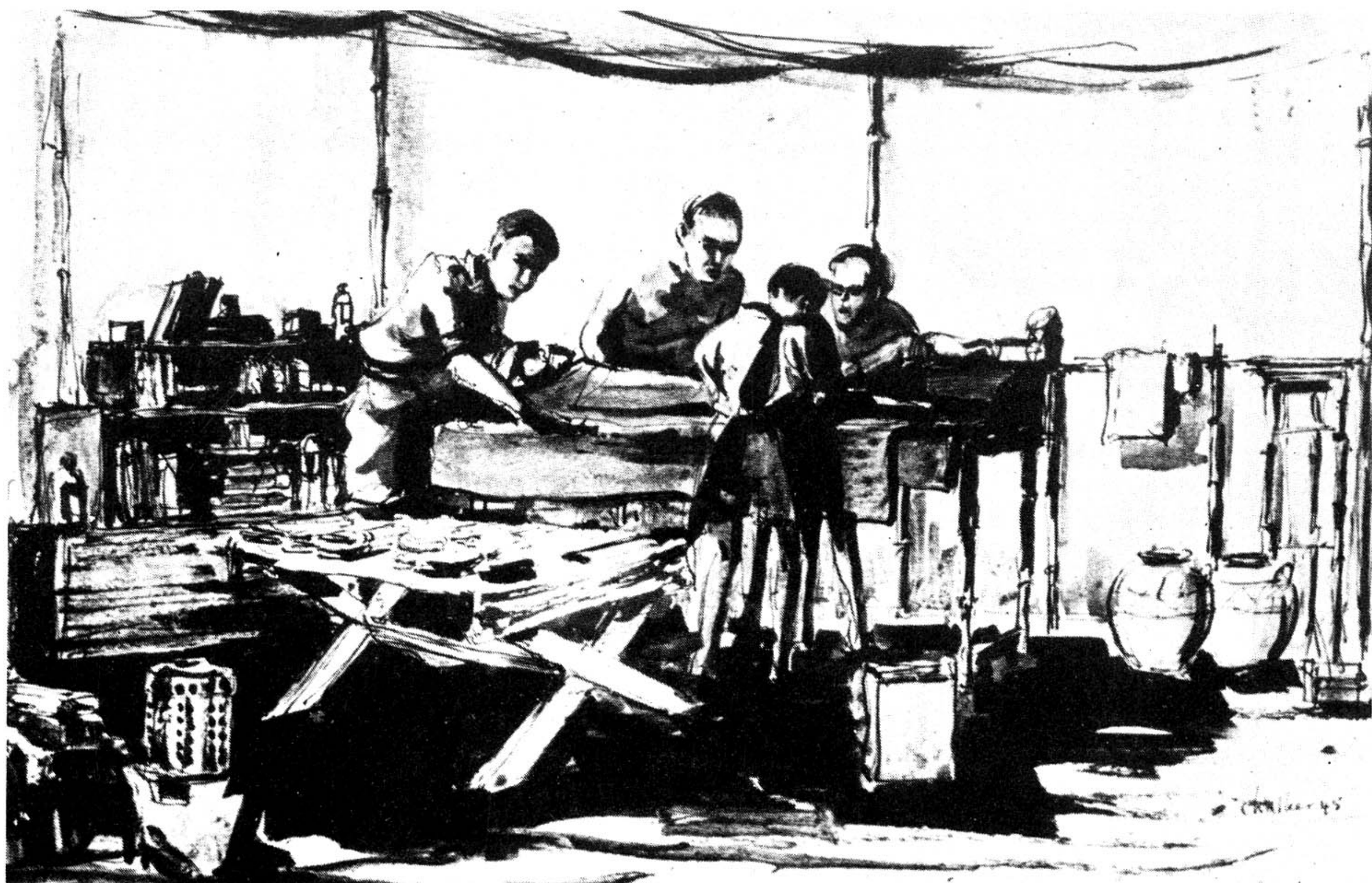


FIGURE 10: Painting of the operating theatre, Chung Kat. Reproduced by courtesy of Sir Edward Dunlop. Everything is home-made, including the operating equipment. Lt Colonel Dunlop is the surgeon. The anaesthetist is Captain McIntosh. Malayan volunteers are giving the anaesthetic.



shall not forget them while poppies bloom in Flanders Fields."

New services took root when the soldiers and civilians worked together for the common good of the Army. Research surgeon Alexis Carrel, and chemist Henry Dakin, introduced the first chemotherapy into surgery by irrigating infected wounds with buffered hypochlorite solution, and this is still used everywhere. Australia's medical scientist, Howard Florey, was a key figure with the chemists in the mass production of penicillin in World War 2. Harold Gillies, the New Zealander, developed plastic surgery at Sidcup with the help of his inventive anaesthetist, Magill. It was a synergism beneficial to mankind.

The desperate needs of mutilated soldiers undergoing faciomaxillary surgery and chest surgery fired Magill to improve anaesthetic technique and invent his intratracheal tube, which, more than any other invention, made cardiothoracic surgery possible. Intratracheal anaesthesia had been introduced into Sydney by Fiaschi and Nash in 1914, but when war was declared, Fiaschi retired from the Sydney Hospital staff and the lamp went out.

I have chosen Henry Newland (1873-1969) as the dedicated archetype all-rounder, warrior-surgeon, whose career bridged two world wars and the gap between them, to represent the surgeons and society of this period. Newland made scientific contributions to chest trauma, to empyema and to plastic surgery in World War I, and with Gilbert Brown, his anaesthetist, he pioneered thoracic surgery in South Australia. He saw the new world of specialities and encouraged young people to take them up. I might place him alongside Melbourne's triumvirate of Newton, Hurley and Upjohn, who cannot be separated. William Upjohn, who died but recently, described it in these words which he adapted from a Chinese poem. "The firefly has wings of flame, the butterfly has wings of gold. The bed bug has no wings at all, but he gets there just the same".

I have chosen Edgar King and Edward Dunlop, both of Melbourne, as representatives of the flower of military surgery of World War 2. Edgar King (1900-1966) was a scholar — he had won the Jacksonian Prize three times and had written a book on heart surgery. He was a pioneer surgeon in thoracic and oesophageal surgery at the Melbourne



FIGURE 11: Sir John Loewenthal (1915-1979).



Hospital, but he put all aside to join in the Desert War. His papers on chest wounds were worthy of the men he served.

Edward Dunlop (Figure 10), represents the surgeons of the prisoner-of-war camps. They adapted themselves to the needs of the men with extraordinary dedication and ingenuity and carried out modern surgery with a minimum supply of drugs, with makeshift equipment, and with essential fluids made up and distilled with the help of army chemists and scientists. All the skills of the modern imprisoned army were enlisted to help them. This was a noble achievement and symbolizes my paper.

There were great achievements in the post-war period leading up to the present day. The honorary system proved inadequate to deal with twentieth century society. It was adapted to full-time teaching departments and to special units. The pioneer thoracic and cardiovascular surgeons gave much to modern surgery. They were heirs to John Hunter. They blazed the trail of new concepts and organization and they developed special units. The spur of necessity — the goad of society, the fire of creative ambition — all of these drove them to research, to invention, and to the adaptation of organizations and resources. They showed that John Hunter's method was still alive and that the Hunterian Laboratory was the key to modern surgery.

Melbourne and Sydney will always be complementary — like mettlesome horses forever striving in a chariot race. I chose John Loewenthal and Bill Hughes to represent post-war developments and changes which are now a part of our new life in a new society.

John Loewenthal (1915-1979) (Figure 11) was the Anderson Stuart of Sydney surgery — the benign autocrat who knew what he wanted. He persuaded all to do his will. He walked the corridors of power and the University, Hospital, Government and College of Surgeons all acknowledged it. He was concerned with standards, with organization, and with unity of the surgeons. He helped to incorporate the academic departments behind the College, and the College gained in international prestige as a result.

Bill Hughes (Figure 12) is the Reginald Ansett of surgery — a man of big ideas and concepts which he adapted to his own life-style and passed on to others. He is a man for the young — enthusiastic and friendly. By organizing the seminar on road accidents and trauma he injected a new vitality into our College and involved surgeons and society just as the war had done. He compelled the surgeons to look at themselves and to plan their futures in society

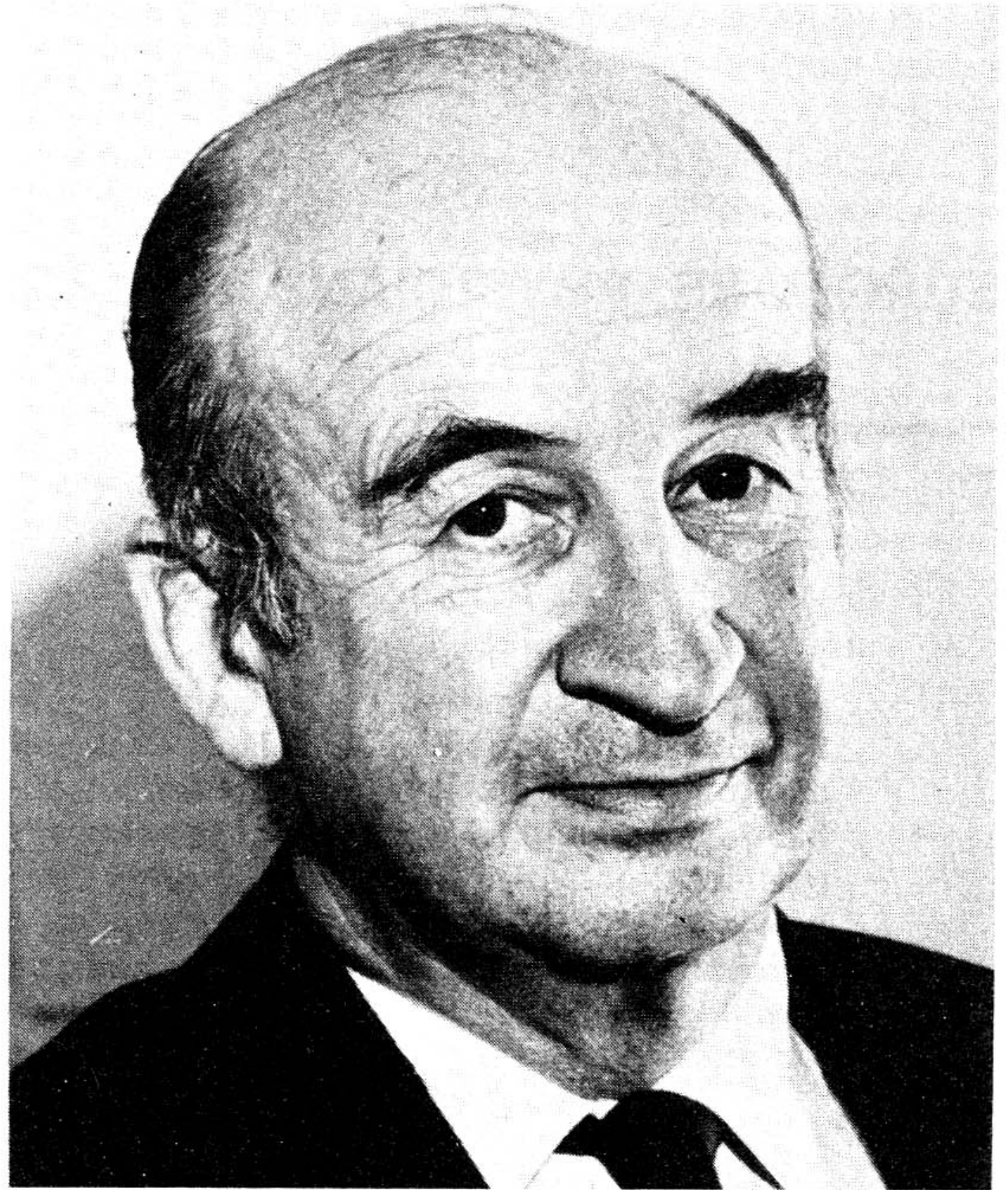


FIGURE 12: Sir Edward Hughes.

wisely. He dreamed of the part Australia might play in Asia by extending a hand of friendship, and with all this he is a man of boyish humour and disarming simplicity.

#### CONCLUSION

Surgery and society are living entities, forever changing and evolving.

The quality of the men who served them will never change.

In this brief sketch I have traced a lineage of men — men of good heart — men who have mastered their craft — men who have applied it in accordance with the ancient tradition of helping those in need — men who matched their times and the leaders of Australian society.

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