PERSONAL VIEW

Does history repeat itself in medicine?

G C Cook

*"The longer you can look back,
the further you can look forward"*

Winston Churchill (1944)

The majority of major discoveries in medicine are *unique*. Two examples are: William Harvey's (1578–1657) description of the circulation of the blood, published in *Exercitatio anatomica de motu cordis et sanguinis in animalibus* in 1628,¹ and the contributions leading up to the enunciation of the "germ theory" of disease; Louis Pasteur (1822–95),² Robert Koch (1843–1910),³ and Joseph (later Lord) Lister (1827–1912)⁴ were largely instrumental in its elucidation. But the underlying idea(s) behind numerous lesser discoveries, which have not attained such a high profile, is often repetitive. Significant lessons for future medical practice can therefore ensue.

An organism is not necessarily causatively related to a disease entity

I cite two outstanding examples at the present time to illustrate this point. A spiral organism which has become definitively designated *Helicobacter pylori* was demonstrated in the presence of gastritis and peptic ulceration in 1984.⁵ Since then, this organism has been shown in epidemiological surveys to be widely distributed world wide in the upper gastrointestinal tract of *Homo sapiens*—but frequently in the absence of localised pathology. Is *H. pylori* therefore the *cause* of these lesions? There is also an ongoing controversy regarding the causative agent of AIDS. Although the organism designated HIV has been incriminated by most investigators, a minority viewpoint (held by Duesberg and others⁶) is that this organism is *not* (by itself at least) the *cause* of the full blown disease.

Historically, William Osler (1849–1919) was initially far from convinced that the organism described by Alphonse Laveran (1845–1922) in Algeria was causatively related to malaria.⁷ A definitive demonstration had to await the researches of Ronald Ross (1857–1932) in Secunderabad and Calcutta, India in 1897 and 1898 respectively.⁸ A more convincing example, perhaps, is that relating to the *cause* of the "negro lethargy" (African trypanosomiasis) which was in 1902 sweeping the northern shores of Lake Victoria Nyanza. Patrick Manson (1844–1922), in the light of limited experience in London, favoured *Filaria (Mansonella) perstans*, whereas Aldo Castellani (1877–1971) in the light of his own researches at Entebbe, Uganda as part of the first Royal Society Sleeping Sickness expedition came to the conclusion that a streptococcus was causa-

tive.⁹ It was left to a subsequent expedition—led by David Bruce (1855–1931)¹⁰ to demonstrate that *Trypanosoma brucei* spp was in fact the *cause* of this disease.

The overriding "message" from these (erroneous) conclusions is that until Koch's postulates are satisfied in entirety,¹¹ the actual causative agent must remain in doubt!

Inoculation/vaccination is *not* without risk

Among numerous recent examples of media concentration on the side effects (complications) of these preventive procedures was an article in the London *Metro* newspaper linking "jabs" with Gulf War illness.¹² Since Mary Wortley Montagu (1689–1762)—who pioneered variolation,¹³ and Edward Jenner (1749–1823)—who popularised cowpox vaccination, in 1796,¹⁴ a great deal of attention has been given to the complications of preventive techniques. Indeed, campaigns have often assumed a "national profile"¹⁵; a *Punch* cartoon of 1898, for example, refers to "De-Jenneration",¹⁶ while several late 19th century pamphlets condemned the technique of vaccination as being positively harmful.¹⁵

Poverty and disease

A recent *Lancet* editorial underlined the fact that the bulk of disease in the lower social strata in the "Third world" is caused by communicable disease, while in the upper strata, non-communicable disease assumes a far higher profile.¹⁷ Therefore, if communicable diseases were eliminated the overall health of the community would benefit greatly; that is, curable disease is related to poverty. There are many lessons here to be learned from Victorian England—where the great medical advances lay in diminution in prevalence, or elimination, of communicable disease. In this context, although it had little impact at the time, John Snow's (1813–58) demonstration that *Vibrio cholerae* is usually transmitted by drinking water contaminated by human faeces was of paramount importance.¹⁸ Cholera subsequently became widely designated the "great social reformer". In the wake of this discovery, Joseph Bazalgette (1819–91) designed and constructed London's sewerage system.¹⁹ This was to a large degree a corollary to the growing supposition that a "contaminated environment" (due to poor standards of sanitation) as outlined by Southwood Smith (1788–1861), was responsible for many of the common diseases. The River Thames, from which London's drinking water was derived, was at that time heavily contaminated. A further example relates to the history of tuberculosis—arguably

Wellcome Trust Centre
for the History of
Medicine, 183 Euston
Road, London
NW1 2BE, UK

Correspondence: Dr Cook

Submitted 26 September
2000

Accepted 2 October 2000

the most important bacterial infection world wide today. John Bunyan (1628–88) termed this disease “The captain of all these men of death”.¹⁶ This situation still pertains—in the presence of HIV/AIDS, increasingly resistant strains of *Mycobacterium tuberculosis* have made this a vast global problem of the 21st century. The *Lancet* recently published an historical paper comparing the diagnosis and management of this disease in the present day with that of 100 years ago.²⁰

In fact the relationship between poverty and disease reflects the content of the Black report, *Inequalities in Health*.²¹ This theme, that is, that disease is more prevalent in the underprivileged, can be traced back many centuries—in fact to the Bible!

Health service management

Many themes which are currently “topical” were *not* in fact introduced within the last few years! As an example, Henry Burdett (1847–1920) was, in the late 19th century, a great enthusiast for voluntary hospitals²²; he also advocated authority of managers over the medical profession, clinical audit, and hospital league tables (in the wake of Florence Nightingale [1820–1910]^{23, 24}). Burdett, also incidentally, pronounced that politicians are a “curse of the sick”.²² This is therefore a further example of recapitulation of historical events which have gone before!

Conclusion

Medical history can, and does from time to time, repeat itself. I have given several examples of this. It is therefore of paramount importance that undergraduate curricula should contain more *history of medicine*—for many lessons applicable to the present are to be found in events which have taken place in former times.

This article is based on a paper presented to the Victor Horsley Scientific Session at the BMA Annual Meeting (“Celebrating the past, shaping the future”) on 28 June 2000.

1 Power d'Arcy. *William Harvey*. London: T Fisher Unwin, 1897: 283.

- 2 Vallery-Radot R. *The life of Pasteur*. London: Archibald Constable & Co Ltd, 1906: 484.
- 3 Brock TD. *Robert Koch: a life in medicine and bacteriology*. Washington, DC: ASM Press, 1999: 364.
- 4 Godlee RJ. *Lord Lister*. London: MacMillan & Co Ltd, 1917: 676.
- 5 Marshall BJ, Warren JR. Unidentified curved bacilli in the stomach of patients with gastritis and peptic ulceration. *Lancet* 1984;i:1311–5.
- 6 Sidley P. Mbeki appoints team to look at cause of AIDS. *BMJ* 2000;320:1291.
- 7 Osler W. An address on the hæmatozoa of malaria. *BMJ* 1887;i:556–62.
- 8 Cook GC. Ronald Ross (1857–1932): 100 years since the demonstration of mosquito transmission of *Plasmodium* spp on 20 August 1897. *Trans R Soc Trop Med Hyg* 1997;91:487–8.
- 9 Cook GC. Correspondence from Dr George Carmichael Low to Dr Patrick Manson during the first Ugandan sleeping sickness expedition. *J Med Biog* 1993;1:215–29.
- 10 Cook GC. Sir David Bruce's elucidation of the aetiology of nagana—exactly one hundred years ago. *Trans R Soc Trop Med Hyg* 1994;88:257–8.
- 11 Cook GC. Cause of AIDS. *BMJ* 1996;312:1231.
- 12 Jones K. New study links jabs with Gulf War illness. *Metro* 19 May 2000: 12.
- 13 Thomas WM. *The Letters and Works of Lady Mary Wortley Montagu*. Edited by her Great-grandson, Lord Wharnccliffe. With additions and corrections derived from original manuscripts, illustrative notes, and a memoir. 3rd Ed. London: George Bell & Sons, 1887;Vol I :394.
- 14 Jenner E. *An inquiry into the causes and effects of the variolæ vaccinae, a disease discovered in some of the western counties of England, particularly Gloucestershire, and known by the name of the Cow Pox*. London: Sampson Low, 1798.
- 15 Cook GC. Charles Creighton (1847–1927): eminent medical historian but vehement anti-Jennerian. *J Med Biog* 2000; 8:83–8.
- 16 Cook GC. *From the Greenwich Hulks to Old St Pancras: a history of tropical disease in London*. London: Athlone, 1992: 7–8.
- 17 Anonymous. A manipulated dichotomy in global health policy. *Lancet* 2000;355:1923.
- 18 Cook GC. The Asiatic cholera: an historical determinant of human genomic and social structure. In: Drasar BS, Forrest BD, eds. *Cholera and the ecology of Vibrio cholerae*. London: Chapman & Hall, 1996: 18–53.
- 19 Cook GC. Joseph William Bazalgette (1819–1891): a major figure in the health improvements of Victorian London. *J Med Biog* 1999;7:17–24.
- 20 Frieden TR, Lerner BH, Rutherford BR. Lessons from the 1800s: tuberculosis control in the new millennium. *Lancet* 2000;355:1088–92.
- 21 Townsend P, Davidson N, eds. *Inequalities in health*. London: Penguin Books, 1988.
- 22 Cook GC. Henry Charles Burdett (1847–1920): outstanding hospital administrator, successful Secretary of the Seamen's Hospital Society and notable philanthropist. *J Med Biog* 2001 (in press).
- 23 Burdett HC. Hospitalism in cottage hospital practice, in relation to Sir James Simpson's theory. *BMJ* 1877;i:351–2.
- 24 Anonymous. Reviews and notices. The relative mortality, after amputations of limbs, of large and small hospitals, and the influence of the antiseptic (Listerian) system upon such mortality. *BMJ* 1882;i:822–3.