nearly a century.

The story develops from the first sighting of a cell, then the recognition of its wall, next that there is a cytoplasm, and a later realisation that there is a nucleus too. Following this came knowledge of cell division and later chromosomes, and the battle victory declared by Boveri who announced that there was no question that chromosomes contained genetic instruction; the search now was for how that was achieved. We are already far down that road.

It would be pleasing to be able to say that national rivalries no longer have a baleful influence on the development and diffusion of medical knowledge. (The shame today is that medical drugs and expertise available in the prosperous world is denied to poor nations.) Harris gives good examples of the rivalry between France and Germany, the result of which was miserly non-acknowledgment of the pioneering work of a foreigner or ignoring what they had discovered. It was on this basis that the Czech Purkinje was underestimated and, of course, that Jewish scientists were either ignored, denied academic reward or both.

I predict that this book will be the last on the subject; its writing is masterly, its argument compelling. Harris might have seemed a know-all in his youth. About the cell, he does perhaps know all.

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The Gospel of Germs, Men, Women, and the Microbe in American Life. By N. Tomes (Harvard University Press, 1998, xv + 351).

In this study of the movement of germ consciousness from the laboratory into American society during the period 1890 to 1930, Nancy Tomes provides fresh and stimulating insights into the negotiations from which emerged a range of beliefs and practices relating to the avoidance of disease. Her central concern has been to examine the relationship, in this society, between scientifically based ideas about illness and the social practices in disease avoidance which give these ideas meaning.

This period is significant because it marked a shift away from a sanitary science focused on disease-bearing emanations from col-

lections of filth, to a bacteriology in which disease was associated with unseen microbes in the atmosphere, in bodily fluids, and in food and clothing. The ubiquity and invisibility of the germ in a closely populated urban society called for more stringent and far-reaching measures than those advocated by the hygiene reformers. The emphasis on household cleanliness persisted, but danger lurked also in clothing, in food and bedding, and in the involuntary reactions of bodies—sneezing, coughing, excreting. Consequently disease avoidance extended into the realm of social intercourse and personal relations. The defensive actions embraced by these 'expansive social concerns' were shaped by the prevailing ethos of ingenuity and a burgeoning consumer society. The meaning of germ theory was absorbed into a range of manufactured products, and enthusiastic reformers joined the battle against disease equipped with all the gimmicks of an inventive advertising industry. The catholicity and proliferation of these disease agents required mass action campaigns, conducted with an 'evangelical fevor' in which the fight against disease was indeed a fight for 'the American way'. By the late 1920s, partly because of the success of such campaigns, public health interest shifted towards identifying and isolating sick individuals.

Tomes approaches the popularisation of germ theory as a 'dynamic where ideas and images are traded among different audiences'. She succeeds masterfully in illuminating the evolution of this cultural consciousness by structuring her narrative through an analogy with the 'Good News' of the New Testament. This is imparted with authority by the apostles of the laboratory and their trustworthy disciples: at first the social hygiene reformers; later the emerging professions of child health nurse and domestic scientist (which incidentally provided novel career paths for women); and then, in turn, union officials, manufacturers, hoteliers, schoolchildren, farmers, and immigrant housewives. Using diverse sources—scientific journals, women's magazines, institutional records and oral histories—Tomes exposes all the loops and turns of an emerging consciousness and changed lives.

She concludes that germ theory had no 'fixed moral or social message'. It was taken up into many and often contradictory standpoints as individuals and groups came to terms with their fears of disease. She contests sociological accounts of cleanliness practice, such as those of Norbert Elias which posit that 'apprehensions about

disease' are rationalisations of practices related to the maintenance of social order. However, I believe the full measure of Tomes' achievement is that she has succeeded in illuminating the very processes and relationships Elias refers to. The evolution of germ consciousness in American society meant the emergence of an interpretative framework within which a relationship was established between disease avoidance and social order. That the cultural artefacts—the practices and conventions which developed within this framework—took on different meanings in different places, even on occasion appearing as superstition, does not diminish the cultural centrality or the artefactural character of the framework. To pick up the New Testament analogy, in the house of rationality, there are many rooms.

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Joined across the Water. A History of the Urological Society of Australasia. By Sally Wilde (Hyland House, 1999, x + 229).

Since the nineteenth century, scientific discoveries and institutional development have created specialties in medicine, with some focusing on particular diseases, some on body systems, and others on patient groups linked by common factors. Defining the boundaries of specialties has meant concentration on specialised training, assessment and licensing, which has sometimes engendered what might be termed 'turf disputes'.

The surgical specialties in Australia are a good case in point. Until the 1970s most Australian surgeons undertook their specialty training in the United Kingdom even though Australian colleges or councils had been established much earlier. Some surgical specialties established their own colleges, while others formed themselves into faculties or sub-specialties of the parent college and/or into specialised craft groups. The general functions of specialist organisations is to set standards for the specialty, to assist in the selection, training and examination of would-be specialists, to provide for continuing education of members, and to foster a collegiality that includes the sharing of experience and knowledge.