

English combines the roles of clinician and medical historian in his presentation of rheumatic fever as a “moving target” for doctors, epidemiologists, laboratory scientists and public health officials who struggled to understand and treat a disease that changed rapidly and dramatically with each generation of patients.

In the eighteenth century, acute rheumatism, characterized by fever and arthritis, was a trivial disease which remitted spontaneously. At the century's end, it assumed a more sinister form, attacking the heart and subjecting its adolescent casualties to severe chest pain and distressing palpitations before they succumbed to pericarditis. During the nineteenth century, endocarditis surpassed pericarditis as the primary cardiac injury, and its association with chorea showed the brain to be an additional target. The skin and connective tissue also became involved, and tonsillitis frequently preceded the fever, joint pains, skin rashes and heart symptoms.

In the twentieth century, myocarditis turned rheumatic heart disease into a chronic, debilitating illness because it smouldered silently, often for decades. By the 1930s, up to two per cent of school age children in Britain and the USA had perceptible cardiac scars but there was already a decline in the mortality from rheumatic fever. By 1944, patients experienced mildly sore throats with minimal joint swelling, which melted away over the next decades to insignificant aches and pains. Chorea disappeared, and by the 1970s rheumatic fever was largely extinct.

During the course of its dynamic history, rheumatic fever taught bacteriologists and immunologists much about the Group A beta-hemolytic streptococcus (GABS) and the body's immunological response to infection. It taught physicians how to detect endocardial damage with the stethoscope and cardiologists how to interpret electrocardiographs in order to gauge myocardial injury during a patient's lifetime.

It taught pharmacologists the benefits of treatment with aspirin, antibiotics and cardiac glycosides. Rheumatic fever made tonsillectomy the most common operation in the United States after circumcision, and produced a generation of post-war cardiac surgeons who became adept at first repairing and then replacing mitral and aortic valves.

Rheumatic fever was diminishing in prevalence before the discoveries of sulphonamide and penicillin. It paralleled similar declines in other streptococcal-related illnesses such as scarlet fever, erysipelas and puerperal sepsis. By the 1950s, only one per cent of streptococcal throat infections progressed to rheumatic fever whether or not antibiotics were given. English believes that the streptococcus contained components which cross-reacted with different parts of the body at different times during its evolution—joints in the eighteenth century; brain, heart tissues, skin and tendons in the nineteenth. By the twentieth century, the streptococcus lost these provocative elements.

This is an accomplished, wide-ranging history which will be enjoyed by health professionals, medical historians and anyone interested in the relationship between infectious diseases and human communities. English reserves his sympathies for the children who spent months or years in convalescent homes enduring rigor-producing fevers for the treatment of chorea, radiation to the heart for myocarditis, tonsillectomies, and endless drug treatments with aspirin, digitalis, antibiotics and corticosteroids. Their travail is part of the history of rheumatic fever.

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Evelynn Maxine Hammonds, *Childhood's deadly scourge: the campaign to control diphtheria in New York City, 1880–1930,*

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Baltimore and London, Johns Hopkins University Press, 1999, pp. ix, 299, £33.00 (hardback 0-8018-5978-6).

Contrary to long-standing popular assumption, the bacteriological revolution of the 1880s did not introduce an immediate, definitive transformation in the disease experience of Western countries. From Pasteur's enunciation of Germ Theory in 1864, through Koch's identification of the anthrax bacillus in 1876, to Roux's announcement of the successful trials of diphtheria anti-toxin treatment in 1894, the therapeutic applications of bacteriology were slow in coming. A clutch of less than satisfactory immunizations around 1900, Salvarsan in 1910, BCG and toxin/toxoid immunization against diphtheria in the 1920s, made up a fairly thin portfolio before the sulphonamides were launched on the medical market in 1934–5. Throughout those fifty-odd years, however, medical scientists remained excited by the therapeutic potential of the new methods, and medical institutions and public health personnel began, with greater or less enthusiasm and persistence, to incorporate bacteriological techniques into their practice. Medical observers have often assumed a smooth transition from traditional to modern in the implementation of these new practices, despite the well-known example of English anti-vaccinationist sentiment—witness, for example, the poor consumptives who flocked to Koch's door at the suggestion that tuberculin might cure their disease. But popular responses to new treatments and new preventive methods are not necessarily immediate, positive or uncomplicated. This was especially the case in the years between 1880 and *circa* 1945, but historical interest has generally focused on the creation and achievement of the new rather than on the processes of diffusion and acceptance in medical practice and patient culture.

The tensions between science, public

health practice and patient constituency are the subject of Evelyn Hammond's study of the campaign to control diphtheria in New York City between 1880 and 1930. New York, which suffered 2000 to 3000 deaths a year from diphtheria in the 1880s, was the first American city to develop bacteriologically-based programmes for the control of the disease following the identification of the diphtheria bacillus in 1880. It began with throat swabs in an attempt to identify and remove diphtheria cases, progressed through anti-toxin therapy to the detection of carriers, and finished with active immunization. The city's experiences in this endeavour revealed only too clearly continuing and seemingly ineradicable conflicts of interest between public health, private practice, public facilities and family feelings. Each different approach to the problem of diphtheria involved negotiating a path through a range of different interest groups and issues of access, cost and accountability. In the process, the city's public health personnel discovered that their authority as scientists was not enough to convince the public of the benefits of the new methods; in the end, they were obliged to resort to propaganda, to manipulating popular conceptions of the disease itself, to creating a "diphtheria conscious" public.

Hammond's careful analysis of New York's experience with diphtheria prevention provides an object lesson in the complex realities of disease control at the local level, and a fine example of the insights which historical study can offer modern efforts at limiting the miseries of disease in diverse social situations. The concentrated focus on New York and on diphtheria gives the book a dense—almost claustrophobic—flavour. Hammond writes as a historian of science, and her interest lies in the question of how science can successfully be applied in potentially hostile situations. Historians of medicine, historians of disease, while appreciating the story she has to tell, may wish that she had extended

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her perspectives to offer a broader account of the disease which provided the vehicle for her investigation. Did other American cities follow New York's example? How widespread were such concentrated preventive campaigns against the disease? How did the anti-diphtheria campaign intersect with preventive action against smallpox? Was such an apparently intense focus on one disease really achieved within a department which had multiple public health concerns? Were there costs to this concentration?

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Anne Borsay, *Medicine and charity in Georgian Bath: a social history of the General Infirmary, c. 1739–1830*, History of Medicine in Context series, Aldershot, Ashgate, 1999, pp. xxii, 484, £55.00 (0-7546-0060-2).

Founded in 1739 to provide lepers, cripples and other “indigent strangers” access to the healing waters of the spa, the General Infirmary dominated the landscape of Georgian philanthropy in the stylish resort of Bath until at least the 1830s. In this meticulously researched monograph, Anne Borsay uses the hospital as a prism through which to view English society in the long eighteenth century, approaching it as an organ, emblem and microcosm of the tensions and transitions which characterized the period. Successfully liberating itself from the straitjacket of an institutional history, this is an ambitious book which seeks to relate the internal dynamics of the Infirmary to a wider set of shifts and developments: to the growth of commercial prosperity and the diffusion of wealth down the social scale; to the gradual eclipse of paternalist ideals by a new moral economy of giving shaped by Evangelical religion, *laissez-faire*

economics and Benthamite utilitarianism; to the professionalization of medicine, the ascendance of the middling sort, and the movement to police and “improve” the lower orders.

This breadth of vision is one of the greatest strengths of Borsay's study. Systematic analysis of the accounts, minute books and admissions registers is integrated with a sophisticated discussion of the changing material and intellectual conditions of a Britain buoyed up with Enlightenment confidence and then buffeted by the challenges of the Industrial Revolution. Borsay shows how the application of the joint stock company to philanthropic ends “sanitized” (p. 94) the business ethos infecting Georgian society. She demonstrates that medical practitioners slowly withdrew from active governorship of the hospital as they consolidated their occupational status and simultaneously tightened control over both their patients and the therapeutic programmes to which they were subjected. She explores the growing divide between staff and inmates and the manner in which, both architecturally and administratively, the Infirmary became an “icon” of the traditional hierarchy and “a reassuring symbol of the obedient poor” (pp. 368, 386). And, above all, she charts the processes by which charity became “an optional badge of civility” (p. 185), a mechanism by which the newly rich “laundered their wealth” (p. 195) and assimilated themselves into the aristocracy and gentry. In short, medical philanthropy is seen as “a route to gentility” (p. 272), a key feature of the making of a middle class.

At times, however, Borsay's attempt to weave the hospital and its governors, doctors and patients into a broader national canvas is a little over-strenuous. For instance, her suggestion that the charitable provision of medical care offered a neutral cause around which Anglican and Dissenter, Tory and Whig, could unite, thus defusing political, factional and sectarian conflict,