for Wexler who nearly exclusively draws on (highly normative) annual reports of the Jerusalem Leper Home. Wexler states that these reports 'are a rich source of material for studying the deaconesses' experiences' (p. 98) which is – from a methodological point of view – more than just suspect. When writing about 'Eskimos' (p. 101) and declaring the two World Wars as 'stormy events' (p. 102) and a 'turbulent time' (p. 100), Wexler also reveals a lack of reflection on language.

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Donnacha Seán Lucey and **Virginia Crossman** (eds), *Healthcare in Ireland and Britain from 1850: Voluntary, Regional and Comparative Perspectives* (London: Institute of Historical Research, 2014), pp. 276, £40.00, hardback, ISBN: 978-1-909646-02-5.

This edited collection emerged from two workshops held in Dublin in 2011 and 2012. It offers a novel approach to voluntarism, while considering some limitations of the existing literature, including the paucity of studies on Ireland and Scotland and a lack of comparative studies of regional health care since 1850. While recognising a traditional focus on general hospitals, its editors redirect attention to many other important institutions, including dispensaries, cottage and isolation hospitals. It also resurrects other neglected themes central to British and Irish health care, including the role of religion in shaping health care practice and policy, and the place of paying patients in hospital finance. In doing so, the book usefully outlines current debates in the history of British health care and provocatively opens up many new ones.

Scene-setting in the introduction begins with the establishment of the Poor Law in Ireland (1838), which the editors contrast with the better known English system, before outlining other key regional disparities, such as the prevalence, and absence, of fever hospitals in some regions. Irish health care was supplemented by a distinctive dispensary system, family members, and many other regular players in the mixed economy of health care. Added to this, however, were profession divisions along denominational lines, with Catholic doctors dominant in the Poor Law and dispensaries; nurses' religious affiliations were equally apparent. Partition of the country in 1922 further complicates the story, with the Poor Law in the Irish Republic eventually resembling a foreign import. Other home-grown initiatives include the Irish Hospital Sweepstakes, and a failure to invest in domiciliary services, leading Ireland to accumulate more hospital beds per inhabitant than both the UK and US. While an NHS was never fully implemented in Ireland, 85% of the population enjoyed free or heavily subsidised health care by the mid-1950s. In Northern Ireland, by way of contrast, the Poor Law lingered and was replaced by a nationalised system in 1948. That said, local initiatives continued, the significance of which are brought out through transnational comparisons.

Even single-nation studies, however, are complicated, as many of this book's chapters indicate. In one of two historiographical chapters, Gorsky demonstrates this by examining how the meanings of voluntarism varied over the past century. The term has been invoked at key periods, for example, to justify women's charitable work, but more recently in the UK due to budget cuts. Gorsky traces these ideas to the eighteenth century; by the early twentieth century, voluntarism already appeared a 'timeless British "habit" '. Its defining feature was unpaid service, but definitions were contingent and fluid. He also considers its relationship to care more recently, suggesting that an exploration of voluntarism in public health might prove more fruitful. This is followed by a chapter by Stewart, who

underscores the volume's call to supplement national histories with international and sub-national ones. To do otherwise offers only a partial view and he therefore turns to the international contexts, including Sweden, America and New Zealand, which drove (and continue to drive) welfare debates in Britain and Ireland.

Suitably primed, readers can commence a section that returns to the voluntary hospital in the contexts of Ireland, Belfast and East Devon. Lucey and Gosling consider patient payment in Ireland, which remained underdeveloped in the Republic given its successful Hospital Sweepstakes. Contributory schemes were therefore more prevalent in Northern Ireland, but absent in unindustrialised regions. They then chart the rise of private hospitals, which provided 583 beds in England in 1938, but accounted for 20% in Northern Ireland. Nevertheless, fees never covered the full cost of care. In his chapter, Martin considers Belfast's Mater Infirmorum Hospital, a Catholic institution which existed outside the NHS until 1973. A teaching hospital for QUB, the Mater competed with the city's Victoria Hospital and clashed with the government. Fearing a loss of its distinct Catholic identity, the Mater operated outside the NHS, supported by its Young Philanthropists, thereby personifying the battle between voluntarism and the state. Government relations improved with economic growth, but this dispute was about more than just funds. Neville completes the section by turning to Devon's cottage hospitals, which collectively provided 12 000 of the UK's 73 000 hospital beds in the 1930s. Located in rural regions, during an age of motor transport, many became 'first aid' stations. As in Belfast, these institutions were central to local identity, which was threatened by state encroachment, which was resisted even if promising solvency.

Part 3 considers the mixed economy of health care, starting with Thompson's study of the South Wales coalfield (1850–1950), where the state was not the sole provider of welfare. Steel and coal employers stimulated company clubs, while 'Dusty doctors' and cottage hospitals assisted under-served residents in coal-mining communities. The labour movement attempted to fill the vacuum, but deprivation all too often made the region distinct. Breathnach's chapter concentrates on district nursing in Ireland, 1890–1904, where a mixed economy was also evident. Focusing on four counties, she demonstrates how denominational concerns shaped perceptions of nursing and how support from the local clergy became crucial to delivering effective services, for nursing work threatened priests, let alone doctors. Greenlees examines a broader range of services provided by religious groups in Scotland, particularly in Glasgow. This injected a moral dimension into welfare, which was dispersed to those whom providers deemed worthy, thereby reinvigorating Christian morality and influencing public policy. Fears of sectarianism eventually weakened Church influence in traditional spheres, leading them to shift their efforts to political means.

The final section examines public health, voluntarism and local government. Wallace does so by exploring an outbreak of smallpox in Dublin in the first years of the twentieth century, which was averted by a responsive local council. Reforms in 1898 transferred responsibility for infectious diseases from the Poor Law to the city, which had previously posted unacceptably high mortality rates; thereafter, it appeared the only capable health care provider, ensuring prompt removal of cases and contacts, carrying out vaccination and disinfection, and searching out cases. Critical, too, were its fund-raising powers and electoral expansion. Ida Milne subsequently considers the response to influenza in 1918–19, when relations between the Ireland's Local Government Board and guardians were deteriorating. Despite the previous success of local action, her case appears to highlight the role of central authorities, who were short of manpower, and local authorities, who shunned leadership. Sheard closes the section using municipal hospitals as a lens to explore the sort of collaboration which occasionally materialised in the previous two case

studies. What she reveals is a very complex mixed economy of care from the 1870s to the 1920s, with hospital provision often costing mid-sized UK towns more than larger ones, a case study of Liverpool underlining how policy varied geographically.

While this might easily have become simply another book on twentieth-century health care in the UK and Ireland, this book, like the topic it covers, is a far more complex entity. The various chapters of this well-edited collection offer an extremely useful and refreshing introduction to students interested in the field of regional health care, summarising a rich seam of historical research. For this alone, I recommend it highly. However, the authors also, collectively, set an agenda for future research, which promises to guide the field, not only by addressing critical gaps in our knowledge, but by encouraging comparative, even multidisciplinary, approaches to voluntarism and regional health care in history.

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Robert G. McKinnell, *The Understanding, Prevention and Control of Human Cancer: The Historic Work and Lives of Elizabeth Cavert Miller and James A. Miller* (Leiden and Boston: Brill, 2016), pp. xvi, 196, $50, hardback, ISBN: 9789004286795.

By the 1940s, it had been inferred that dozens of chemicals caused cancer in people or had been shown to do so in experimental animals. These chemicals came from a bewildering array of structural classes, including polycyclic hydrocarbons, aromatic amines, and others. A seminal paper[1] authored in 1947 by Elizabeth C. Miller (1920–87) and James A. Miller (1915–2000) provided the first clue to an underlying common mechanism for the biological activities of chemical carcinogens. They observed that feeding rats a carcinogenic dye resulted in a chemical bond between a metabolite of the carcinogen and liver proteins. Over the next twenty-five years, this extraordinary scientific team of husband and wife 'discovered and developed the important unifying concept that most carcinogenic and mutagenic chemicals are not carcinogenic or mutagenic per se but that these compounds must undergo metabolism to reactive electrophilic metabolites that exert their effects by covalently binding to critical sites on cellular macromolecules (DNA, RNA, and protein).'[2] In addition to its importance as one of the foundations of modern cancer biology, this unifying concept has had broad societal implications for how we identify cancer-causing chemicals and how we protect people from them. The Millers' discovery is so widely accepted that it is often cited without attribution and they have received relatively little recognition for their contributions outside the field of cancer research. Robert G. McKinnell has recently published an excellent biography of James and Elizabeth Miller, motivated in part by his desire 'that the Millers should be recognised by the myriads of ordinary people whose lives have been impacted for the better.'

The first half of McKinnell's book focuses on the arc of key discoveries made by the Millers and the context in which that research took place. Although this section is written in a clear and accessible style, it is likely to be challenging for readers who are not scientists or students of medical history to follow in detail. McKinnell discusses many

[1] Elizabeth C. Miller and James A. Miller, 'The Presence and Significance of Bound Aminoazo Dyes in the Livers of Rats Fed p-dimethylaminoazobenzene', *Cancer Research*, 7 (1947), 468–80.
[2] Allan H. Conney, Miriam C. Poirier, Young-Joon Surh and Fred F. Kadlubar, *Elizabeth Cavert Miller (1920–87) and James A. Miller (1915–2000): A Biographical Memoir* (Washington, DC: National Academy of Sciences, 2009).