takes the account up to the First World War and investigates how Australian snakes and venoms intersected with the story of Albert Calmette's 'universal' *antivenin* which emerged from the Pasteur Institute in Saigon, situating venom science in respect of the quantitative turn in pathology, bacteriology and physiology after 1880. The data of venom science in the form of tracings, tables of numbers and microscopic observations pointed to the biochemical variability and geographical specificity of venoms, and confounded hopes that scientific medicine would provide a universal antidote.

This fascinating book remains enjoyable reading throughout, and deserves a broad audience far beyond historians of scientific medicine. An extensive and diverse range of primary sources and secondary literature has been consulted, and the book engages with numerous classic topics from the history of science, such as evidence, witnessing, expertise and authority. It serves also as a corrective to the still-dominant picture of colonials as collectors, and both highlights the specificity of Australian colonial science and reaffirms the need to focus on intercolonial circulations. It would have been valuable to learn more about Indigenous Australian conceptions of snakes and venoms. In its close treatment of the relationships between practitioners, snakes and dogs, *Venomous Encounters* is suggestive of how animals themselves have affected scientific practices.

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Rob Boddice, **The Science of Sympathy: Morality, Evolution, and Victorian Civilization**. Springfield: University of Illinois Press, 2016. Pp. iv + 179. ISBN 978-0-252-08205-4. €28.00 (paperback).
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Darwinism. Eugenics. Vaccination. Vivisection. All are topics well known to the trained historian of nineteenth-century medicine or science. Indeed, it would be easy to presume that there would be relatively little left to say on such well-rehearsed topics. However, in *The Science of Sympathy: Morality, Evolution, and Victorian Civilization*, Boddice tackles each of these themes head-on from a fresh history-of-emotions perspective.

Boddice's starting point is Darwin's idea that the basis of morality in civilized societies was derived from a natural, but highly developed, capacity for sympathy. The more sympathy a population had, the more civilized and moral it would be. In Darwin's view, this helpfully explained the apparent superiority of white, middle- to upper-class educated Victorian men. However, Boddice persuasively argues that these Victorian men possessed a particular form of emotional 'sympathy' that was radically different from that which we experience (or are expected to experience) today. This was a type of sympathy that, between around 1870 and 1900, gave birth to the idea that vivisection, compulsory vaccination, even the eugenic remoulding of societies, were all compassionate acts and, importantly, moral ones.

In pursuing this approach, Boddice sets out a framework, grounded in emotions-history methodologies, for better understanding how ideas and actions that appear abhorrent in the twenty-first century once made sense in the context of, particularly, late Victorian emotional regimes. Moreover, Boddice moves away from the abstractions of some emotions-history research to produce an impressive book which demonstrates how emotions actually worked in society, how they shaped and created medical and social interventions, how ideas led to practices.

Boddice's opening chapter examines Darwinian concepts of sympathy and outlines the emergence of a new, sympathetic and scientific man of thinking – an individual with self-defined superior intellect, emotional disposition, social insight and new experimental means to effect change. This individual also saw himself as the embodiment, if not implementer, of an evolved future for humankind, one in which suffering had been structurally reduced, all thanks to the advance of medical science, public health and eugenic measures.

This backdrop is then applied to the various case studies. Boddice presents his first – Victorian vivisection – as an affective practice of Darwinian sympathy with the physiology laboratory serving as a theatre of emotional control. Historical research to date has typically taken the apparent emotional callousness of vivisectionists for granted, in many ways following the lead of the antivivisectionists themselves. In contrast, Boddice's analysis insists that this new breed of medical scientist sought to check their emotions, to subdue, change and redirect them for the greater good of humankind. In this particular emotional regime, inflicting pain upon living animals could be genuinely thought of as an act of human sympathy.

Similar arguments are made in relation to Victorian public health officials' checking of their feelings towards liberty and invasions of privacy. But perhaps most significantly, Boddice offers an emotion-based rationale for the controversial field of eugenics. In the work of Galton and others, eugenics was guided by a sympathy for the whole of society. The successful rearing of a master race depended upon detached social engineering. Emotions themselves were to evolve and function on a higher plane if they could be suppressed for the social good.

Boddice admits that emotional failure was a common problem. However, the burgeoning community of late Victorian medical scientists was sufficiently large to provide continual reinforcement for a new emotional regime justified as morally and emotionally right. And, importantly, these scientists were not merely social commentators or critics: they affirmed their world views through practical activities such as cutting open live animals or vaccinating a child without express permission.

The Science of Sympathy is an impressive achievement, stimulating, interesting and well written. Boddice has reshaped some of the most common themes of Victorian medical history and remoulded them with up-to-date emotions-history methodologies. Indeed, perhaps the key strength of *The Science of Sympathy* is its demonstration that emotions history can be successfully and practically used in the histories of science and medicine to further our understandings of even the most familiar of topics, such as Darwinism. The book has the potential to be a key emotions-history text.

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Raymond G. Stokes and Ralf Banken, **Building on Air: The International Industrial Gases Industry, 1886–2006**. New York: Cambridge University Press, 2016. Pp. xvii + 465. ISBN 978-1-107-03312-2. £64.99/$99.99 (hardback).
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Building on Air is a welcome addition to the extant histories of industrial sectors. It is perhaps very surprising that a history of such an important industry has not been published before, although it is important to caution that the authors have defined the industrial gases industry in a way that suits their task: those gases that are produced directly from air. Carbon dioxide, although a vital gas and industrial raw material, is largely excluded since its main source was the brewing industry, but later it came to play an important part in the industrial gases industry.

Building on Air is primarily a business history. Most of the technical developments relating to the manufacture of gases, the pioneers in the industry and the uses for the gases are largely covered in the early chapters. The remainder of the book is devoted to the industry's business development, its expansion and the vital role patents and intellectual property rights played in the outcome of many negotiations.

The book is divided into four broad parts. The first, 'Defining an industry, 1886–1914', focuses on the origins of the air gases industry from the production of pure oxygen in 1886 by Brin's Oxygen Company, a British firm that used an invention of the French Brin brothers, to the more technologically advanced techniques of Carl Linde and Georges Claude that allowed