policy; tension between national and local interests; the importance of communications; and the financial impact of the epidemic are prominent themes in all.

Each of these books does, however, make a distinct contribution to our understanding of yellow fever and its impact on the late nineteenth-century South. Thus Humphreys places the epidemic within the broad context of local and national public health policy while Ellis focuses on the experiences of the cities of New Orleans, Memphis and Atlanta. Bloom's book is valuable because it takes us out beyond the cities and into their hinterlands, making us aware of the experience of the wider community as waves of panic and epidemic disease reached outwards into the vast interior of the Mississippi Valley. Before 1878, the South had existed in the not uncomfortable belief that yellow fever was confined to a definite zone in the tropical south, but in 1878 the disease travelled hundreds of miles north to reach Louisville and St Louis, Grenada and Holly Springs and many other settlements which had previously considered themselves to be beyond the limits of infection. The tremendous impact of the 1878 epidemic lay not just in the numbers suffering and dying or in its devastating economic effects, but in the appalling novelty of its geographical reach.

One of the attractive and original features of this book lies in its sense of the ecology of yellow fever, and in Bloom's constant, unobtrusive detailing of the weather patterns and surface water conditions which permitted *Aedes aegypti* to spread so far beyond its normal range. As he notes succinctly, the unusual weather was apparently the controlling variable everywhere: a "freakishly mild winter" followed by a long warm spring maximized egg-survival and ensured extended breeding. In counterbalance to this sense of the wider environment, Bloom is also interested in the more narrowly intellectual aspects of the epidemic, in the theories of the nature and transmission of yellow fever which preoccupied contemporary observers. Humphreys discussed changing theories of yellow fever in a chapter; Bloom pursues them as a running theme through his book. This integration of medical theory with epidemiological reality reinforces the sense of the disease as a living entity whose vagaries shaped the wider history of the epidemic; and it is this sense of the disease as a vital player in the story that seems to be the distinctive feature of Bloom's account of yellow fever in the South.

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William H Brock, *The Fontana history of chemistry*, London, Fontana Press, 1993, pp. 744, £8.99 (00–0215–319–X).

Chemists used to be conscious of and proud of their history. They liked to trace their intellectual ancestry: their professor, tutor or supervisor had studied with X, who was a pupil of Y, who had done his PhD with Liebig, who had worked with Gay-Lussac, who in turn had been trained by Berthollet, a colleague of Lavoisier. The Chemical Revolution of 1789, when Lavoisier's book was published, was intertwined with that other great Revolution, in which Lavoisier was to lose his head. Chemists could look back to this not very distant past, when the tyranny of old errors was overthrown, and a new order established—making a science out of an erudition—associated with these great names and with Dalton, Davy, Berzelius and Dumas. Chemistry then seemed the fundamental science, dealing with the powers that modify matter; penetrating beneath the shell and surface of things, which was the sphere of mechanics. It was also an essentially experimental discipline, involving the hands as well as the head, and thus educationally valuable; concerned too with the interesting secondary qualities—colours, tastes and smells. Electricity and mineralogy were absorbed into the chemical empire; chemists had already explained respiration and photosynthesis, and it seemed that these Frankensteins might account for life. Students were trained in this great tradition; and the

history of chemistry was an important part of lecture courses and textbooks.

Now things are rather different. Chemistry is taught in a dryer manner, and its popular reputation is rather low: in the last century, fertilizers and explosives were examples of triumphant science in the service of mankind—now we view them with trepidation. Professor Brock's book is timely. It is also an astonishing *tour de force*. Cowley wrote of Bacon that "Life did never to one Man allow/Time to Discover Worlds, and Conquer too"; but Brock has digested and mastered an enormous amount of material, and worked it into an accessible form. Unlike some nineteenth-century predecessors, he has not written "applied" history seen almost exclusively from the perspective of the present, but has striven to place past chemists in their context: like them, he has come right up to the present, treading hard on the heels of active chemists. Naturally, there has been a great deal to leave out; this is one of the great tests of the historian, and Brock seems to have been very judicious.

His story begins with alchemy, and then looks at the seventeenth and eighteenth centuries; but the major part of the book, nearly four hundred pages, is devoted to the period between Lavoisier and William Crookes, President of the Royal Society during the "Chemists' War" of 1914–18. Here we can learn about how the science was taught, about the chemical industry (where Brock is sceptical about the chemical empire Britain is alleged to have lost to Germany), and about laboratories, as well as looking in some detail at the various discoveries and interpretations made by chemists. This was the heroic age; and towards the end of it new methods and ideas from physics, notably the spectroscope and thermodynamics, came in and pointed the science in a new direction, dominant ever since.

In our century, chemistry has been "reduced" to physics, and become an essential service science; its language reformed by Lavoisier and his associates has become as rebarbative as that of alchemy; and its history, to which Brock allots 200 pages, is hard for the outsider to follow. Throughout the book, we find chemical equations used when appropriate; and this convenient shorthand, whose history is described, should not be too forbidding for any reader. But in this last part of the book, the equations become formidable; and conceptions such as resonance, molecular orbitals and nucleophilic substitution while presented with admirable clarity and concision are not easy reading for those without a good deal of chemistry. This part might work well for popularizing relatively recent chemistry among those not specially concerned with it, as Mary Somerville's books did in the last century; but it must be chiefly directed at chemists and students of the science. Non-chemists nevertheless ought to read the book too, for there are interesting examples of how progress is not confined to "centres of excellence", of how the notion of simplicity can turn out a poor guide, of enormous and damaging rows between eminent practitioners, and of great men's mistakes; as well as good examples of the relationship of theories to facts, and of evidence to proof. Above all, we see science here as a bold and exciting human activity, whose history is worth study.

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Jutta Kollesch and **Diethard Nickel** (eds), *Galen und das hellenistische Erbe*, Sudhoffs Archiv, Beihefte 32, Stuttgart, Franz Steiner, 1993, pp. 214, DM 74.00 (3–515–06084–7).

The Fourth International Galen Symposium was dogged by misfortunes: the death of its organizer on the conference eve; non-attendance of scholars; non-submission of papers—and, one must add, the historical accident of being held in East Berlin a mere two months before the fall of the iron curtain, which could have led to a more balanced scholarly representation. All of which makes the range of subjects and approaches available