

Book Reviews

Interest in the nature and functioning of research groups is, of course, not new. Gerald Geison's account of Michael Foster's Cambridge Physiology School remains the most accomplished elaboration, to date, of J. B. Morrell's earlier attempt to construct a model to explain the success or failure of individual "schools". Like Morrell, Fruton begins here with Liebig's group at Giessen, before going on to analyse other prominent German chemical and biochemical research groups in the period 1830–1914. Particular attention is focused on the groups of Felix Hoppe-Seyler, Willy Kühne, and Franz Hofmeister in biochemistry, and on Adolf von Baeyer and Emil Fischer in chemistry. Biographical details of each leader's "scientific progeny" fill seven appendices. Together with a bibliography and index they make up some two hundred pages, or about 40 per cent of the book's length. Chapter six, on modern research groups, also includes a section on the impact of physical chemistry on biochemistry after 1900.

All in all, there is a wealth of information here. It is a very different book to Robert Kohler's *From medical chemistry to biochemistry: the making of a biomedical discipline* (1982), and it emerges from a very different historiographical perspective. Medical historians will need to consult both.

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L. J. RATHER, *A commentary on the medical writings of Rudolf Virchow: based on Schwalbe's 'Virchow-Bibliographie', 1843–1901*, Norman Bibliography Series 3, San Francisco, Norman, 1990, pp. xi, 236, illus., \$125.00 (0-930405-19-6).

Rudolf Virchow has been well served by historians. Erwin Ackerknecht's biography of the great pathologist is still fresh after almost forty years. For almost that long, the late Leland J. Rather devoted his formidable linguistic and scientific skills to explicating, translating, and elucidating the nuances of Virchow's medical and epidemiological contributions. Rather spent his professional life as a pathologist but, like Walter Pagel, history seems to have been his abiding love.

The posthumous publication of this commentary on Virchow's medical writings is a fitting culmination of these decades of scholarship. Rather was a master at using modern knowledge to aid in historical understanding. He never, however, fell into the trap of modernizing or blind hero worship. The present volume is based on a bibliography of Virchow's writings which was published by his pupil, Julius Schwalbe, as part of the celebrations of Virchow's eightieth birthday in 1901. Rather has corrected a few of Schwalbe's slips and added a few items which were either published subsequently or have since come to light. He has provided both German titles and English translations, and for about a third of Virchow's books and articles Rather offers commentaries which range from a couple of lines to more than two pages. These commentaries summarize what Virchow attempted in the relevant piece of writing, link themes to earlier or subsequent contributions and point the reader to relevant secondary scholarship. Generous use of quotations from Virchow's writings provide a kind of developmental chronology of his thinking. They remind us repeatedly that Virchow was not simply one of the founding fathers of cellular pathology but one of the outstanding liberal thinkers of the nineteenth century.

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CAROL L. MOBERG and ZANVIL A. COHN (eds), *Launching the antibiotic era: personal accounts of the discovery and use of the first antibiotics*, New York, The Rockefeller University Press, 1990, pp. xii, 97, illus., (0-87470-047-7).

René Dubos (1901–1982) was born and educated in France, where he graduated in Agricultural Science. He went to visit America and on the boat met Selman Waksman, who later discovered streptomycin. Waksman gave Dubos a job at Rutgers University, where he

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studied soil science. He moved to the Rockefeller Institute because Oswald Avery was seeking an enzyme which would attack the polysaccharide capsule of virulent pneumococci and Dubos offered to find a soil organism which would do so. He succeeded, and went on to seek other antibacterial activities. The search yielded *Bacillus brevis*, from which Dubos and Rollin Hotchkiss isolated the first clinically effective antibiotic, tyrothricin, and identified its two components, tyrocidine and gramicidin. A year later Ernst Chain and Howard Florey published their first account of penicillin. Dubos continued to study competition between species and became a wise and much appreciated publicist on ecology and environmental issues.

To commemorate the discovery of gramicidin, a symposium was held at the Rockefeller University in October 1989. The speakers had worked early in the field of antibiotics, including Rollin Hotchkiss (gramicidin), Sir Edward Abraham and Norman Heatley (penicillin), Theodore Woodward (chloramphenicol), George Mackness and Bernard Davis (anti-tuberculous agents). Their accounts are full of revelations of laboratory details which do not appear in published papers but which are often the essence of success or failure of a particular project. Also they illuminate the warmth and depth of Dubos's own philosophy of science and of life. Unlike the proceedings of most symposia, this one richly deserved to be published, and should not be forgotten.

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CATRIONA BLAKE, *The charge of the parasols: women's entry to the medical profession*, London, The Women's Press, 1990, 8vo, pp. xvii, 254, £6.95 (paperback).

In their critique of medicine as a patriarchal institution, late twentieth-century feminists have often adduced the bitter struggles over women's entry to the medical profession in the nineteenth century. It is, therefore, surprising how little that struggle in Britain has been studied in recent years. The broad outline of the story is fairly well-known, but analytic histories have been sadly lacking. Catriona Blake's book helps fill this gap. Using contemporary periodicals as her main source, she gives a narrative history of the period from the late 1840s, when American precedents first aroused interest in a medical career among individual women in Britain, to the mid-1870s, when a route to medical education and the Medical Register for women was finally established after a major public campaign. She combines this detailed narrative with an analysis of the broader women's movement and the professionalization of health care which formed the context for the campaign, no easy task in a short book.

Catriona Blake's stance throughout her book is staunchly feminist. Like any feminist claiming that medicine is a bulwark of patriarchy, she has to account for the fact that, in Britain, women succeeded in entering medicine almost fifty years before entering other "male" professions such as law. To her credit, Blake does not evade this point but uses it to buttress her central argument: that the case for women doctors and the extensive public support for them in the 1870s was fought and won on the demand of women for medical care from women, rather than on claims for equal employment opportunities. In this she is surely right, although I would argue that equal-opportunities arguments were far from insignificant, particularly in generating support among liberal men.

The book makes explicit parallels between medical men's allegedly paranoid opposition to women within their ranks then and now. At times, Blake's rather sweeping generalizations about their psychological proclivities threaten to obscure her analysis of the structural basis of the nineteenth-century opposition and the divisions among medical men, or the possible damage wrought by Sophia Jex-Blake on her own cause. But she has provided a much-needed base from which such issues might be pursued.

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