

to the type of relativism which earlier chapters were designed to avoid; and Phillips here forgets his own correct contention that the technical languages spoken by "scientific communities" are not fully autonomous, but depend for their sense on a relationship to the non-

technical language used in the wider human community to which they belong. A particular scientific elite is not a court beyond which there is no appeal. □

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Remote and legendary figure

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Joseph Lister, 1827–1912. By Richard B. Fisher. Pp. 351+16 plates. (Macdonald and Jane's: London, 1977.) £7.95.

ON the 150th anniversary of his birth and a mere 65 years after his death, Joseph Lister has already become an extremely remote, almost legendary figure. Even in his lifetime, during the 40 years of fame when every conceivable honour came his way, Lister appeared aloof and enigmatic. Little or no insight into his personality can be gained from the only two full-length biographies available until now, that of G. T. Wrench published in 1913, and the official one by Lister's nephew, Sir Rickman Godlee, which first appeared in 1917. Happily, the new biography by Richard Fisher deals fully not only with Lister's varied scientific and surgical work, viewed from the perspective of our own time, but also with Lister the man. Drawing on a considerable volume of unpublished correspondence, diaries and laboratory notebooks, the author's portrait will reveal for most readers an unexpectedly complex individual. Certainly, the popular view of Lister as the serene benefactor of mankind whose work on antiseptic surgery was greeted with universal acclaim has long needed correction. A glance through the editorial and correspondence columns of the *Lancet* and *British Medical Journal* from 1867 into the 1880s shows Lister to be at the centre of polemics—many of his own making and not all concerned with antiseptic surgery.

Lister was fortunate in his background—a congenial quaker family originating in Yorkshire, quaker friends such as Thomas Hodgkin and Elizabeth Fry who were devoted to science and philanthropy, and a prosperous wine merchant father. Joseph Jackson Lister, who by 1830 had made fundamental contributions to microscopy and was to become a life-long mentor and confidant of his son. As a student Lister performed extremely well at University

College, London until 1847, when he underwent a religious crisis and in March 1848 suffered a severe 'nervous breakdown' of a depressive nature, which prevented any further work for 18 months. Although he eventually made a good recovery, Lister subsequently was afflicted by recurrent self-doubts and a type of paranoia. His biographer convincingly uses psychological analysis to explain the paradox of a man who was gentle, kind, chivalrous and in many ways noble, but who was often publicly tactless, obtuse and, for example, an implacable opponent of the entry of women into medicine. Fortunately, Lister's mar-



Lister at Glasgow in 1865

riage, though childless, was extremely happy. His wife (a non-quaker) was his constant support, amanuensis and laboratory assistant. Moreover, in the stormy early days when Lister was under frequent attack in the medical journals he had the consolation of regular support from the young journal *Nature*.

Lister's scientific work is, in general, well reviewed. The early studies on involuntary muscle, inflammation and blood coagulation earned him, at the age of 33, a Fellowship of the Royal Society—where he joined his father and was eventually a most distinguished President. Most of this work was primarily carried out to provide material for Lister's undergraduate lectures. Using the microscope perfected by his father, Lister over a

ten-year period made meticulous observations on various contractile tissues and on the effects of irritants on the microcirculation of the frog's foot web. He greatly clarified the early events in inflammation by describing, in sequence, arteriolar constriction, slowing of blood flow and increased adhesiveness of erythrocytes—the latter having been first observed *in vitro* by his father and Thomas Hodgkin in 1827. Simultaneous changes in the pigmentation of the foot web underlined for Lister the truth of John Hunter's belief that inflammation was an active process. Similarly, blood coagulation was also shown to be a series of processes governed by tissue and vascular factors and not due, as was widely believed, to the passive loss of a 'liquefier' such as blood ammonia.

Lister always held that this work was his major scientific contribution: bacteria, which were so prominent in his later work, were simply specific irritants that triggered off inflammation and, occasionally, intravascular coagulation. To most modern observers, however, his pioneer microbiological researches from 1868 until the mid-1880s seem far more important. They were not only crucial in the battle against abiogenesis, but provided much-needed scientific support for Lister's 'Antiseptic System', which was at first extremely vulnerable at the hands of informed opponents.

Adequate attention is given in the book to Lister's technical achievements, including his method of obtaining in 1877 a pure bacterial culture by serial dilution. But the author in discussing the complex early studies on bacteria and fungi misses the extraordinary fact that Lister observed the antibacterial action of *Penicillium* species in 1871, and later used crude penicillin preparations in treatment.

Unfortunately, the book contains many medical and medical historical solecisms. For instance, jaundice is not synonymous with hepatitis, pin-worms do not cause skin disease ('ringworm' does), hospital gangrene was not due to soil-borne bacteria, and hydrocele is not a testicular growth. William Harvey published in the seventeenth, not the sixteenth century; Sir James Simpson worked in Edinburgh, not Aberdeen; Ehrlich's great chemotherapeutic work was on arsenicals, not mercurials; and Behring was certainly not a colleague of Pasteur. Although these and other blunders are irritating, Mr Fisher has written a definitive biography of a remarkable man. Such a book has been long awaited and is to be warmly welcomed. □

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