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art. In a slightly different form, similar themes appear in Andrew Warwick's paper on computation which convincingly raises the curtain behind numerical tables to reveal the *deus ex machina* to be numerous skilled underlabourers doing sums. The other piece in this section, George Sweetnam's essay on the diffraction grating, usefully takes the reader into industry and the work ethic. More collected volumes from these workshops are promised. If they match the precise standard of this one they cannot appear too soon.

Christopher Lawrence, Wellcome Institute

Catherine A Neill and Edward B Clark, *The developing heart: a 'history' of pediatric cardiology*, Developments in Cardiovascular Medicine, vol. 163, Dordrecht and Boston, Kluwer Academic Publishers, 1995, pp. vi, 169, illus., £40.00, \$62.00, Dfl. 95.00 (0-7923-3375-6).

The quotation marks in the subtitle of this book are appropriate for its claim to be a historical work is tenuous indeed. Rather it should be regarded as source material for history.

To justify these comments it is necessary first to point out its historiographical shortcomings. Of these the first is the authors' almost exclusive reliance on secondary sources for any work written before the last fifty years or so. The account of these earlier years is, in any case, cursory but, even allowing for this brevity, there are some notable omissions. Thus, when dealing with the development of ideas about the pathogenesis of congenital heart disease, there is no reference at all to the important work of Johann Friedrich Meckel and Carl Rokitansky. Another notable omission is the failure to comment on the long debate about the mechanism of cyanosis in congenital heart disease. The, to us, obvious explanation that it is due to a veno-arterial shunt failed to convince many physicians, including Thomas Peacock who discussed the problem at length and concluded that the mechanism was venous stasis.

Perhaps the most serious omission is the failure to refer to James Brown's monograph. It was, of course, Brown's misfortune that he wrote in the few years immediately preceding the dramatic developments in diagnosis and treatment which are the main theme of this book. However, many authorities would agree that, as a picture of the "state of the art" at that time, Brown's book was unsurpassed.

Enough has been said about this book's shortcomings and it is necessary to comment on what I believe to be its real significance. It is best regarded as a memoir by two experienced paediatric cardiologists giving an account, largely from personal experience, of the developments in the last few decades in the embryology, pathology, clinical features, treatment—indeed all aspects—of congenital heart disease. If it is read as such, there is much of interest in it to the cardiologist but perhaps not to the historian without a medical background; technicalities abound especially as the authors have boldly taken their story right up to the present day (the latest reference is 1994). An engaging feature is the frequency of asides on topics such as the books read by healthy and ailing children and references in the non-medical literature to children with heart disease. There must be few books on paediatric cardiology or its history which include references to Lewis Carroll and Beatrix Potter and quotations from Anton Chekhov's *A doctor's visit* and Anna Sewell's *Black beauty*. And, where else could one find an account of the foundation of the Harriet Lane Home, the site of Helen Taussig's famous clinic?

P R Fleming, London

Myer H Salaman, *Experiment and interpretation: a pathologist reflects on thirty years of cancer research*, London and Atlantic Highlands, NJ, Athlone Press, 1995, pp. ix, 246, £17.95 (0-485-11470-4).

For the historian of medicine interested in the working practices of cancer researchers, in their experiments and their interpretations of

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these experiments, the title of this book seems at first sight very intriguing. The author, Myer Salaman, was the director of the cancer research department of the London Hospital Medical College, and participants' accounts of their working practices are very rare. Salaman's reflections on his work as a cancer researcher promised, then, to fill an important gap in the historical record. Unfortunately, *Experiment and interpretation*, is not such an enriching historical narrative, but rather Salaman's inquiry into the relationship between his practical experiences very sparsely reported, and some philosophers' very different accounts of life in the laboratory.

Experiment and interpretation, is an investigation of Karl Popper's refutation of logical positivism and his replacement of this epistemology with hypothetico-deductivism. Salaman approves the rejection of the positivists' inductivism (often echoed, as he points out, in many scientists' own reflections on the epistemological foundations of their work). This naive inductivism, Salaman observes, poorly matches with his experiences in cancer research, where experiments did not follow one another automatically, as the products of logically processing the results of preceding experiments. It cannot be used, then, as the logical positivists hoped, as the basis for a norm of conduct to produce valid scientific knowledge. On the other hand, Salaman rejects Popper's rigid falsificationism and outright dismissal of all inductivism. In his work, Salaman often persisted in the pursuit of particular hypotheses even after their failing some experimental test, and he was not the only one to do so. The formulation of these hypotheses was grounded, moreover, in empirical considerations, in concatenations of observations. He admits, of course, that these were the observations of prepared minds.

Salaman's discussion of the relationship between experiment and interpretation is both philosophically and historically problematic. His criticism of philosophers' misconstrual of scientific practice and their normative approach covers a very limited literature. Although dominant in the post-war years, logical

positivism was not the only philosophical current articulating claims about the conduct of scientific inquiry. A brief consideration of even scientists turned philosophers, such as Michael Polanyi, would have opened alternative philosophical views more directly engaged with the complexities of scientific practice. More crucially, Salaman stops at Popper and does not address later philosophical inquiries such as Ian Hacking's, which have focused quite explicitly on scientific practice and are not aimed at building a new set of norms to rival the logical positivists'. Nor does Salaman engage with the more recent ethnographic studies of scientific practice, wherein discussions of this subject more fully concentrate on the material implications of this term.

This latter point brings me to the historical problem. Scientific practice is invoked in *Experiment and interpretation* only as a test of a philosopher's construction of the scientific mode of inquiry, with little evidence that it is not itself a scientist's rational (re)construction of what was done in the laboratory. It may be simply a rhetorical device to bolster the doubtful claim that the scientist can speak about what happens on this site with far greater authority than the philosopher. More importantly, the discussion of cancer research, on which Salaman's criticism of philosophers is based, occupies about half the book, without ever providing any insight into the material context within which the experiments and ideas were formulated. In other words, Salaman provides no sense of the historical location of certain experiments. This is particularly frustrating because some of his footnotes suggest very interestingly that the (very common) limited availability of institutional resources sometimes dictated how experiments should be structured, and even the abandonment of controlled experiments, or, alternatively, dictated the design of experiments so that negative outcomes were themselves positive outcomes for some other theory. Such material specificities might explain why null hypotheses were never or rarely tested in scientific experiments.

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In sum, *Experiment and interpretation* is disappointing, both as a philosophical and a historical inquiry into the practice of science. It also stands as a poor memoir for a pathologist's lifelong investment in trying to understand experimentally the genesis of cancer—Salaman died just before the publication of this book. It certainly does not allow us, the readers, to understand the epigraph: from my old self to my young self, who would have learned a lot from it.

Paolo Palladino, Lancaster University

Alan E H Emery and Marcia L H Emery, *The history of a genetic disease: Duchenne muscular dystrophy or Meryon's disease*, London, Royal Society of Medicine Press, 1995, pp. xvi, 248, illus., £20.00, \$40.00 (1–85315–249–8).

This is a remarkably informative book. The title is much too modest and the Emerys have not only covered the history of Duchenne muscular dystrophy (Meryon's disease) but also offer insight into all the main contributors both in the early development of knowledge as well as in recent times. They examine the history of the other forms of muscular dystrophy and also give an overview of major scientific developments, particularly in relation to the molecular genetic revolution, which had its first successful application in identifying the unknown protein of Duchenne muscular dystrophy after location and characterization of the gene for the disease.

After a review of the eighteenth- and nineteenth-century accounts of muscular dystrophy and its separation from muscular atrophy, such as those by Charles Bell, Giovanni Conte, Richard Partridge, and William Little, a full chapter is then devoted to the remarkable contributions of Edward Meryon (1807–1880), a physician at St Thomas' Hospital in London, who gave a very detailed description of the disease, together with an important insight into the pathological

features in the muscle, the normality of the nervous system, the pattern of inheritance through the female, and also speculation on the possible pathogenesis, with a remarkably perceptive and prophetic suggestion that the primary abnormality might lie in the muscle membrane, which is being proved correct by recent research. After the detailed discussion of Meryon's contributions, the Emerys then review Meryon the man, and also give an interesting vignette of society and medicine around Meryon's time and look to the possible environmental factors that might have influenced his choice of muscle diseases as an area of special interest. They trace Meryon's family back to the seventeenth century when his forebears, who were French Huguenots, fled from France to England at the time of the revocation of the edict of Nantes in 1685, and settled in the town of Rye. Finally they managed to find Meryon's completely overgrown grave in the Brompton cemetery and also a painting of him by the Victorian portrait artist John Linnell.

A similarly detailed account is given of the life and times of Duchenne de Boulogne (1806–1875), who worked at the Salpêtrière in Paris and made major contributions to neurological diseases in general and particularly to the muscular atrophies and muscular dystrophy. They also discuss the possible reasons for Duchenne not only apparently ignoring Meryon's earlier contributions but also at times completely misquoting his interpretations.

These early descriptions of muscular dystrophy are followed by a review of the major contributions since that time, beginning with the remarkably lucid writings of William Gowers (1845–1915) and continuing to the present time. The book is well illustrated with portraits of all the early figures in the muscle world as well as a large series of mainly informal portraits of the recent and contemporary enthusiasts in the field.

The Emerys have also reviewed the advances in thinking over recent years in relation to the pathogenesis of muscular dystrophy and the eventual location, isolation