

informative account of the journal, register, letter and minute books, and of the many other series deriving from the Society's idiosyncratic structure and practice over more than three centuries. The private archival mysteries of the Society from "lapsed certificates" and "archived papers" to "Bulloch's Roll" are revealed briefly and clearly, rendering the archive intelligible for the researcher.

The Wellcome Institute's Contemporary Medical Archives Centre is not yet twenty years old, but it has already accumulated more records than the Royal Society in over three centuries. The achievement is remarkable both in the quality and range of the collections acquired. Amongst seventy-eight substantial collections of personal papers are those of Lord Moran, Sir Richard Doll, Sir Ernst Chain, Sir E A Sharpey-Schafer, Frederick Parkes-Weber, Sir Henry Head, Melanie Klein, Sir Thomas Lewis, Marie Stopes, Sir Edward Mellanby, Sir Peter Medawar, and Sir Leonard Rogers. Amongst fifty-seven societies and associations which have placed their records in the Centre's care (itself an indication of the reputation and trust which it now commands) are those of the Eugenics Society, Family Planning Association, Lister Institute, Physiological Society and the Research Defence Society. The pace of development is fast, and the Centre's archivists have kept scholars up to date through successive editions of the *Guide*. This is the fourth edition, recording nearly 100 new collections acquired since 1991, including the papers of John Bowlby, Cicely Williams, the Chartered Society of Physiotherapists and the Health Visitors' Association. Also included for the first time is a brief account of the Royal Army Medical Corps Muniment Collection.

These are model guides, which admirably fulfil their purpose. They are affordable too, and attractively illustrated. Historians of science and medicine will find them not only valuable but indispensable.

Richard Palmer, Lambeth Palace Library

Thomas L Hankins and Robert J Silverman, *Instruments and the imagination*, Princeton University Press, 1995, pp. xiv, 337, illus., \$39.50 (0-691-02997).

It is banal to point out that these days historians of science and medicine busy themselves with discarded knowledge. Natural magic, mesmerism, phrenology and spiritualism, for example, are all regarded as legitimate areas of contextual historical concern. They remain too themes of antiquarian interest. This historiographical state seems less true of the history of technology. In this discipline extinct objects such as orreries and astrolabes are sources of antiquarian concern but other machines, such as steam engines, which are studied contextually are obviously investigated as precursors of things modern. Watt's steam engine is to modern transport as the reflex theory (rather than the phrenology) is to modern neurology. Even Steven Shapin and Simon Schaffer's much applauded *Leviathan and the air pump* of 1985 is a study of a device which is symbolic of the origins of modern science (that of course was the point of their study). *Instruments and the imagination* is to be welcomed as a wonderful piece of historical indulgence and historiographical innovation, for it treats contextually of devices of little antiquarian interest, which are hard to represent as precursors of modern scientific symbols: the scanner or the cloud chamber, for instance. What was the historical significance of Athanasius Kirchner's sunflower clock, the ocular harpsichord of Louis-Bertrand Castel, the Aeolian harp and, slightly less beyond the fringe, magic lanterns and speaking machines? The authors treat all these objects with respect and in depth, and with impressive scholarship. Perhaps most successful, because it is the hardest case, is their attempt to explicate the contemporary significance of Kirchner's clock, driven by sunflower seeds, which was said to follow the sun even when the clock was indoors or when the sun was covered by clouds. The authors traverse a variety of witnesses and magnetic, atomic and magical

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philosophies to discern how the *belief* in this *effect* was achieved. To tell more, however, would be to spoil a good story. The chapters on the other machines are equally well done if having slightly less of the flavour of the detective story. In two chapters the authors desert their genre and pursue the precursors of modern devices: graphs and photographic depictions. Both of these chapters are informative and theoretically interesting, especially the latter, which includes a useful discussion of how photographic (and other) images in the past were regarded as either natural (realist) or conventional representations. According to which approach was adopted unusual images could be designated as either unnatural distortions of nature or extensions of vision. Such a decision has had important consequences in the history of science as in the debate over Galileo's telescope. Let this volume be a lesson to historians of medicine and let us see contextual studies not just of odd ideas but of odd machines: Perkin's tractors or the Pulvermacher Belt, for instance.

Christopher Lawrence, Wellcome Institute

Lance Day and Ian McNeil (eds),
Biographical dictionary of the history of technology, London and New York, Routledge, 1996, pp. xiii, 844, £85.00 (0-415-06042-7).

This dictionary includes nearly 1,300 entries covering those who have contributed to "the advance of technology" from antiquity. They are, the editors state, largely male white Europeans and North Americans, but Day and McNeil have, it seems, done their best to assess the contribution of women and non-white people. The justification, and the unitary theme for the volume, is that contributors to technological innovation are what count. This is not a dictionary of technologists, but of inventors. However, the editors are not consistent: my eye fell on the entry for Sir James Lithgow, an important British shipbuilder who, on the evidence of the entry, was not

responsible for a single innovation. The entries are short: just over half a page on average. There are more entries for aerospace than for agriculture and food; more on railways than on weapons. But medicine is well represented with eighty-four entries. One wonders what judgements were made about what is important.

The quality of the volume is, to be frank, low. One very noticeable feature is how out-of-date the suggestions for further reading are. The most recent bibliographic reference for Joseph Lister dates from 1948; Howard Florey's entry has no secondary literature. The entry on Henry Ford does not include any reference to the literature produced by professional historians of technology. This is by no means unusual: the contributors to the volume seem unaware of most of the professional history of technology over the last twenty or so years. The entry on Edison, for example, has no reference to the work of T P Hughes. The entry on Sir Alaistair Pilkington does not refer to the well-known history of the Pilkington firm. And so on. It is thus not surprising to find very few professional historians of technology among the contributors. The book is thus neither a guide to recent knowledge, nor does it give any access to it. Its only use for the historian of technology is as a quick reference guide, and as a poignant reminder of what the history of technology used to be like.

D Edgerton, Imperial College, London

J Rosser Matthews, *Quantification and the quest for medical certainty*, Princeton University Press, 1995, pp. x, 195, £32.00, \$39.50 (0-691-03794-9).

The launch of the journal *Statistics in Medicine* in 1982 marked, by one set of criteria, an important step in the emergence of medical statistics as an established medical specialty. In the folk memory of that young discipline, its modern origins are very precisely dated to 1937, the year in which Austin Bradford Hill published in the *Lancet* the