

BOOK REVIEW

MADE IN ENGLAND—BUT NOT IN LONDON!

A. D. Morrison-Low, *Making scientific instruments in the Industrial Revolution*.
Ashgate, Aldershot 2007. Pp. xvi + 1–408. £55 (hardback).
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*reviewed by D. J. Bryden**

11 Pensham Hill, Pershore WR10 3HA, UK

The focus of this book is the making of scientific instruments in non-metropolitan centres, from the early decades of the eighteenth century to the Great Exhibition of 1851. Woven into and underpinning the text is the economic and business history of the period. It is the quality of this marriage that makes this a book that should be read by anyone with a serious interest in the Industrial Revolution in England, and it should be on the shelves of every library that covers economic and business history or the history of science and technology. Those without specialist interests in instrument making should take note of the way in which material evidence has been used, particularly to support the overall thesis, which argues for the importance of provincial instrument-making workshops, not solely to meet local needs but as a significant supplier, largely at the cheaper end of the market, to the London trade. Conventionally, it was London that led Europe as the eighteenth-century centre for the manufacture and worldwide sale of scientific instruments. Over the past four decades a handful of studies have indicated that significant instrument making also took place in other British centres—in Edinburgh, Glasgow and other Scottish towns, as well as in Dublin and other towns in the island of Ireland.

This masterly exegesis demonstrates in considerable detail that London was not a lone player on the English stage—indeed, that some provincial centres were supplying the London trade with both parts and completed artefacts. Yet, as Morrison-Low indicates, the provincial manufacturer and designer did not always play second fiddle to the London atelier, as witness the success of the marine sounder and mechanical log of Edward Massey of Hanley (Staffordshire), patented in 1802 and 1806. Massey later established workshops in Coventry (Warwickshire) and Prescott (Lancashire), only moving to London in 1825. Another example is the use of steam-driven machinery to grind lenses in large numbers, which seems to have been pioneered in both Darlington and Sheffield at least a decade before the early 1830s, when the technique was established in the London area by opticians who had migrated from Sheffield.

It is difficult to imagine that this book could have been written by anyone other than a dedicated museum professional. That is not to imply that it is an internal and object-oriented study, rather that few historians have fully mastered the art of using artefact studies as significant primary and secondary source material. As befits a study that has been stimulated by material culture,

*davidbryden@phonecoop.coop

there are more than 60 illustrations of both instruments and trade-related ephemera, and these are fully integrated into the text. I note an error in the caption to figure 8.10: for '1856', read '1756'. Because the book is not printed on art paper, the quality of reproduction suffers, but that price is worth paying to have the images where they ought to be, and their very presence underlines the additional dimension given to this study by the fact that the author has extensive hands-on experience of curating the artefacts of science—the devices with which savants, practitioners and the wider educated public investigated, utilized and demonstrated their changing perceptions of the natural world. The book opens with a well-drawn outline of the economic history of England from 1760 to 1851, a scene-setting essay that distils and at times challenges recent scholarship. From this base there follow a series of chapters outlining the history of instrument making in contrasting provincial centres—the ports of Bristol and Liverpool, the inland towns of Sheffield and York, the manufacturing centres of Manchester and Birmingham. A catch-all chapter covers other smaller centres, from spas such as Bath and Cheltenham to ports such as Exeter, Hull and Newcastle. The London trade is also

described, in a manner that emphasizes how it differed in both scale and mode of production from what was taking place outside the metropolis, and in particular how the manufacture of precision instruments was central to London's European reputation. These chapters are given coherence by considerations of the industrial organization and production of the provincial trade and of the supply and demand for instruments. Given the nature of the evidence, drawn from a wide variety of sources, much of the book is descriptive, because quantitative primary evidence relating to particular workshops is rare. Nevertheless, in so far as the number of businesses operating at any one time is a measure of the size of the provincial trade, the 50 pages of appendices that provide a directory of instrument makers in Birmingham, Bristol, Liverpool, Manchester and Sheffield have been used to give both general and specific charts of growth. For this reviewer, the acid test of any scholarly book is whether I would have purchased a copy for my own bookshelf, had I not been invited to write a review. In this case my response is certainly 'yes'. Furthermore, reading the book has not been a chore, but an eye opener.